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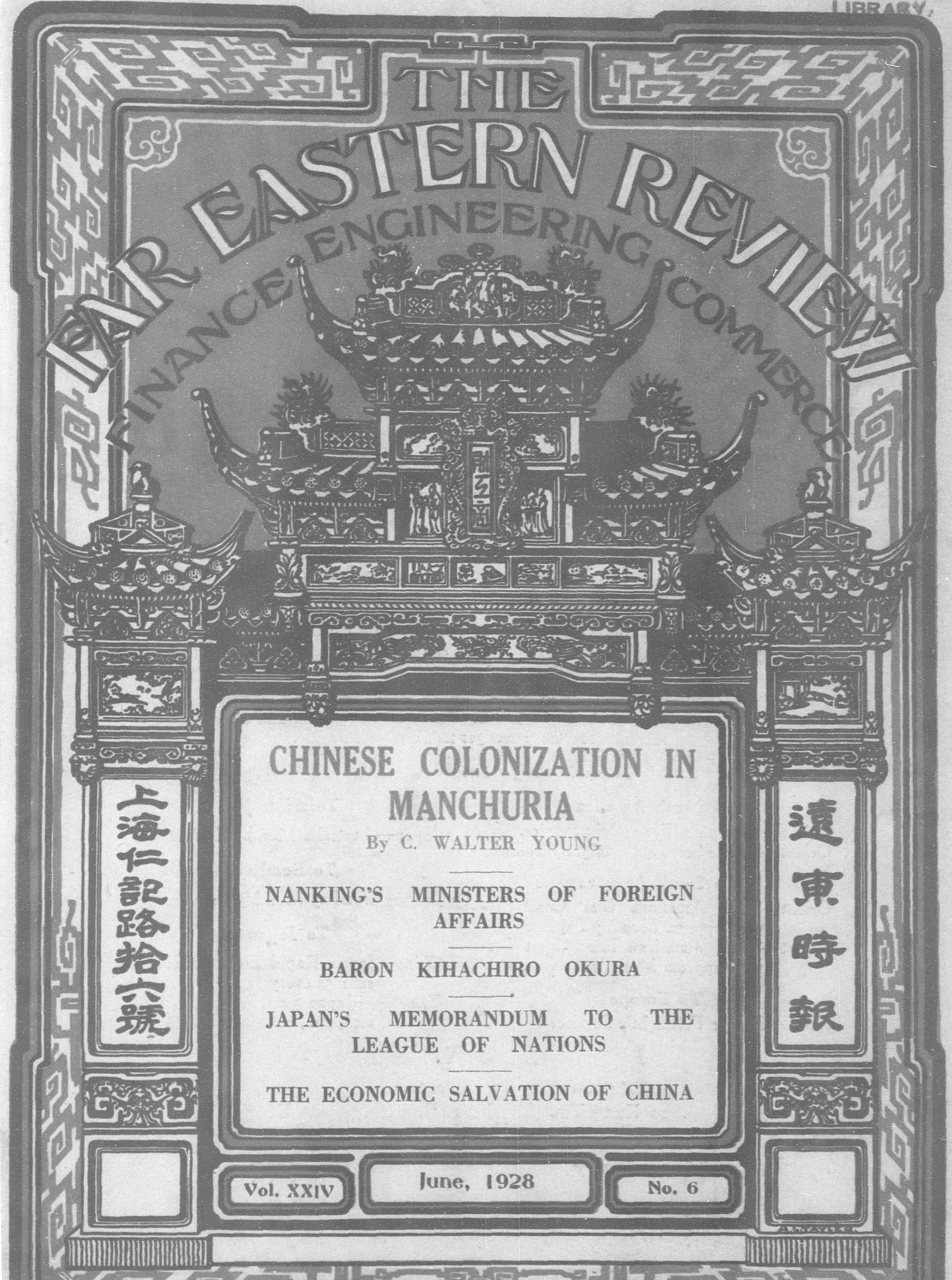

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CHINESE COLONIZATION IN MANCHURIA

By C. WALTER YOUNG

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THE ECONOMIC SALVATION OF CHINA

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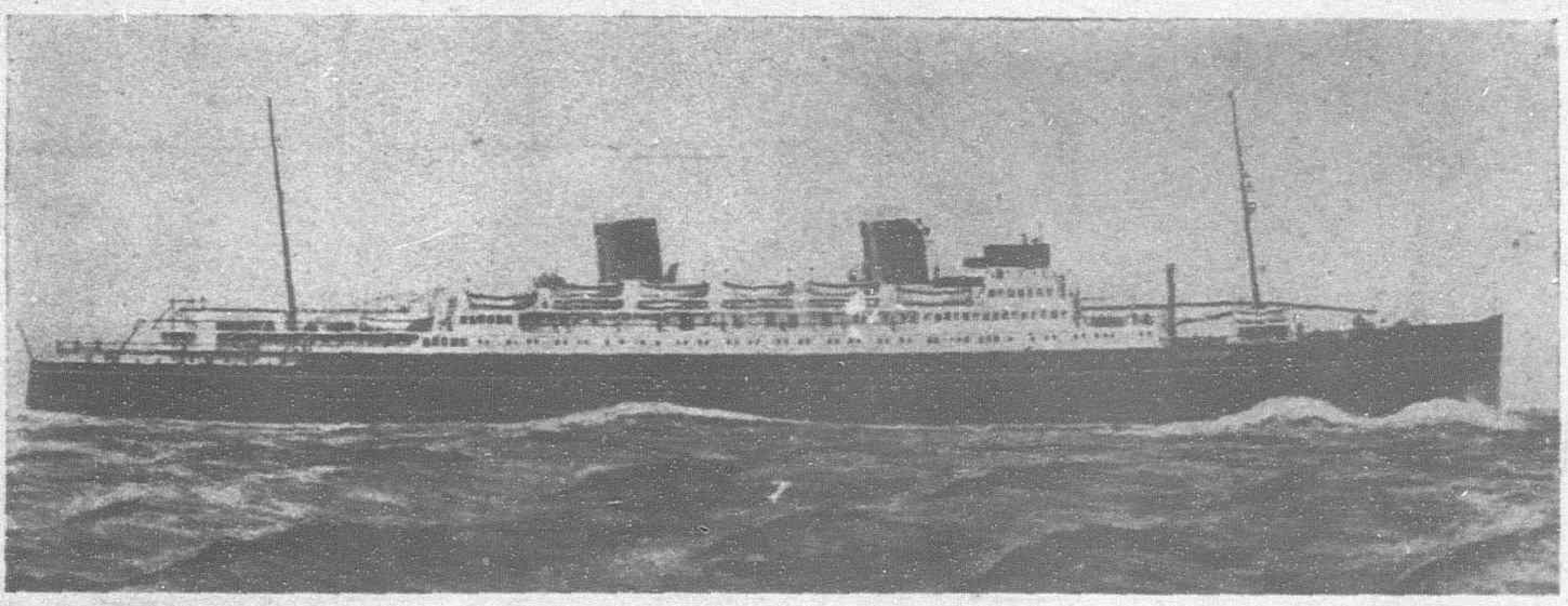

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Chinese Colonization in Manchuria

By C. Walter Young

Part I.—Motives and Characteristics

INTRODUCTION.

THE continuous stream of Chinese emigrants which flows in four channels from within the Great Wall to Manchuria constitutes a phenomenon which has no parallel elsewhere in the world to-day. This movement to Manchuria, to be sure, is but one of several somewhat similar treks to pioneer belts which include parts of Canada, the Argentine, Rhodesia, Australia, Siberia and Mongolia, as well as obtrusions of Chinese, for example, in areas which cannot be classified now as pioneer zones, such as the Philippines, the Straits Settlements, and the East Indies, particularly Java. But no single population movement, measured by total numbers migrated to a given zone during the past two years and now in progress, can compare with this actually unique outpouring from within the Great Wall to Manchuria.

The most recent available data obtained from the only agencies competent to compile reliable figures on the subject point to the conclusion that approximately 1,000,000 Chinese immigrants arrived in Manchuria from other parts of North China during the past immigration year, 1927. This is far greater than the number that has ever entered Canada or the United States in any single year of those really great boom years of immigration to the New World before the world war, and this in spite of the attractive immigration policies or inducements offered by the British Empire settlement authorities, the Dominion government, or the United States.

POPULAR AND SCIENTIFIC INTEREST.—For many years, particularly since the overthrow of the dynasty in China in 1911, has this movement into Manchuria progressed apace. For many years, too, there has been an obvious popular interest in the movement which up to 1926 had for its principal characteristic the fact that the immigrants were almost entirely men and that their mission in Manchuria was seasonal labor, or at most temporary. Before 1925 little or no effort had been made by any qualified authorities to investigate the character of this migration to Manchuria, or even to preserve accurate figures of the numbers migrating, far less to propose scientific projects for facing the same, particularly as the movement tended to become more and more important in connection with permanent settlement. Sporadic mandates of provincial authorities in the Three Eastern Provinces, Fengtien, Kirin and Heilungkiang, were issued offering inducements by way of cheap land or rentals as avowed encouragements or aids. The same continues to-day. But until July, 1927, the Chinese Government (Peking) published no comprehensive study of the subject, leaving the task to be assumed by the agencies most competent to study the matter, the railway authorities in Manchuria, who, because it is the railways that transport the great majority of the Chinese immigrants north to the places of dispersion, were possessed of the necessary data.

Immigrants on Board a Steamer Entering the Harbor of Dairen, the Port of Japanese Leased Territory

Widespread popular interest in the movement of Chinese into Manchuria has been preceded, if not actually produced, by a very few studies of those who sensed the world importance, particularly the localized importance in Eastern Asia, of this unusual migration. Even non-popular studies, written to publish the much misunderstood figures and characteristics, have attracted the attention of those who recognize in the movement not only much of human but of general interest.*

But what is of more importance, within the past year a serious effort has been initiated by scientific societies and institutions of international complexion to study the subject of Chinese immigration to Manchuria as a colonization movement of major importance, or to consider the movement in relation to the population and food problems in which China and Japan are concerned. The American Geographical Society, in co-operation with the National Research Council and the Social Science Research Council, has included Manchuria as one of the several "pioneer belts" to be studied both for scientific and eventually practical purposes.†

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* For illustration see *The Literary Digest*, October 29, 1927, p. 21.

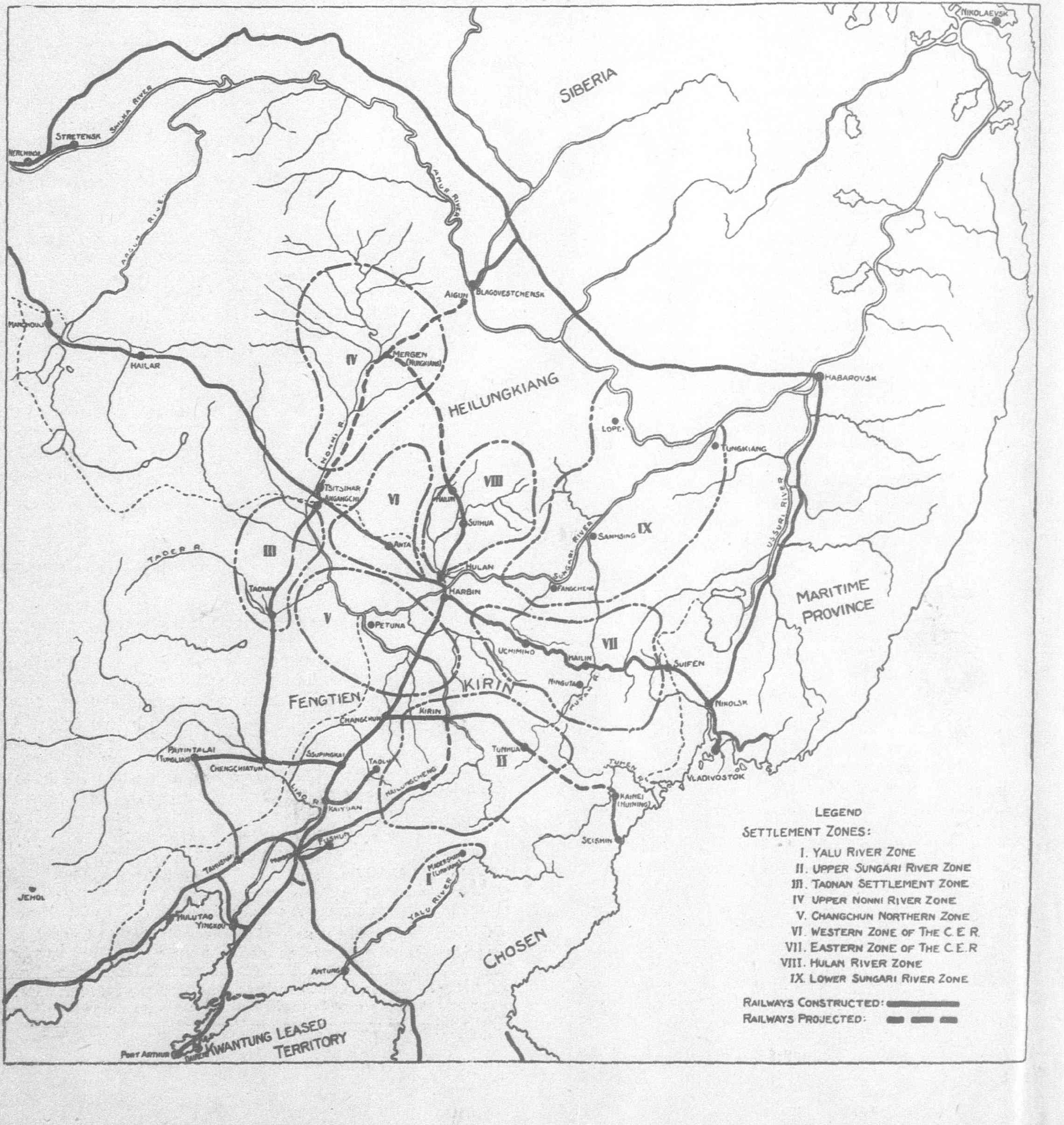
† *The Geographical Review*, October, 1926 (organ of the American Geographical Society), article by Dr. Isaiah Bowman, "The Scientific Study of Settlement," p. 647ff. Also *Foreign Affairs*, October, 1927, same author, "The Pioneer Fringe."

The session of the Institute of Pacific Relations held at Honolulu in the summer of 1927 gave much consideration, in fact major attention, to two problems, China's internal disorder and need for a stable government, and Japan's food problem, her need for raw materials and trade outlets. Because the subject of settlement in Manchuria has a bearing on both of these the Institute has started a program for further study of Chinese colonization and consequent development of resources in Manchuria.

GENERAL CONSIDERATIONS AFFECTING THE STUDY.—Manchuria during the past thirty-five years periodically attracted world interest, interest signalized by the events connected with the years 1894-95, 1900, 1904-05, 1907-11, 1912, 1915, 1917, 1921-22 and more recently. Each marks an episode of more than passing interest for those who are familiar with international complications in Manchuria. The memory of these episodes but serves to give emphasis, however, to a body of fact which to-day makes of Manchuria a region of unflagging interest, facts, each of which is intimately related, one way or another, to the subject of Chinese colonization in Manchuria, the economic effects of which alone are to be considered in the present paper. Among these facts the more important are the following.

No part of China has enjoyed so long a period of practically uninterrupted peace as Manchuria—not even excepting Shansi province—a period which has been generally free at least of civil wars and consequent interruption of communication facilities. Except for minor disturbances, never sufficient to interrupt traffic on the principal railways for more than an almost inconsequential time, this comparative peace of Manchuria has lasted since the Russo-Japanese war. No part of China has made such notable advances in development of international trade during the past twenty-five years. Nowhere has the native production of the soil and of the mines been increased so markedly. While Manchuria has but 6 per cent. of the population of China, her trade during 1925 was over 30 per cent. of the total of all China. In thirty years all her railways have been built, until to-day Manchuria has approximately 50 per cent. of all the railways in China (including Manchuria),

OUTLINE MAP SHOWING SETTLEMENT ZONES IN MANCHURIA. ORIGINALLY PREPARED BY C. WALTER YOUNG TO ILLUSTRATE "CHINESE COLONIZATION IN MANCHURIA"



Junk Wharf at Dairen, South Manchuria. Dairen is the Principal Port of Entrance for the Chinese Immigrants from Shantung and Chihli

and is better served by rail communication than any other part of the country. During 1926 over 80 per cent. of all the rails imported into China went to Manchuria, of which, incidentally, 60 per cent. came from the United States. Finally, it is significant that the port of Dairen has risen to second place among the ports of China, now ranking second only to Shanghai, and during 1927 supplied 13 per cent. of the maritime customs revenues for all China, the dutiable imports being, of course, far less than the exports. These facts give color and added importance to the development of the country which is bound up in the increasingly permanent character of Chinese colonization, especially of North Manchuria.

The Extent and Character of the Movement to Manchuria

Chinese immigration to Manchuria is not a new phenomenon. It antedates the Christian era. Long since have the nomad tribes been displaced, absorbed or pushed down the banks of the Sungari and the Amur rivers, until to-day one can travel almost the length and breadth of the Three Eastern Provinces and fail to find more than the fast disappearing survivals of once vigorous and bellicose peoples, the men of the wide open spaces. And though the dikes that held the flood of Chinese from breaking into Manchuria were kept in fair repair by the Manchu dynasty, there was always a steady seepage beyond the Great Wall, and following the middle of the nineteenth century a combination of factors encouraged first illicit and then sanctioned influx from within the Wall. The last fifteen years have seen an enormous increase in the annual totals of immigrants to Manchuria, but it was not until 1925 and 1926 that momentum of the increase made of the movement a thing unprecedented.

CHANGE IN VOLUME OF IMMIGRANTS AFTER 1925.—Previous to 1926 the maximum annual totals of Chinese immigrants to Manchuria never exceeded 500,000.* In 1925 approximately that number came by land and sea from Shantung, Chihli and other provinces, but during 1923 and 1924 the annual total did not exceed 400,000. The year 1926 marked a notable change with the coming of 600,000, an increase of 100,000 over the previous year. But however noteworthy the increases in 1925 and 1926 they cannot be compared in volume with that of 1927. During the first six months of the year over 600,000 Chinese immigrants came to Manchuria and, on the basis of monthly reports following July, it is apparent that at least 1,000,000 immigrants entered Manchuria during the entire year (Neither Koreans nor other immigrants are considered in this article). Thus it is evident that as many Chinese immigrants entered Manchuria during the first half of 1927 as during the whole of the previous year, which hitherto had been the leading immigration year. And rather than abating for 1928 the movement is increasing in momentum, taxing the very capacity of the railways and steamships to carry them. The increase obviously is now produced largely by the insufferable famine conditions prevailing in Shantung. It is not improbable that 2,000,000 immigrants will have entered Manchuria during the year 1928.†

CHANGE FROM SEASONAL LABOR TO PERMANENT SETTLEMENT.—The migration of Chinese to Manchuria has until recently been rather in the form of a seasonal movement of male laborers than anything of great permanent significance for settlement of new lands. Each year, of course, a few have settled permanently. The last three years have altered this situation and the most remarkable fact to-day concerning the whole movement is the ever-increasing percentage of the immigrants who remain in Manchuria beyond the first season, thus altering the movement from one of incidental, though interesting, bearing on the development of Manchuria to one which means permanent colonization and therefore of profound effect on the future.

Certainly the most striking characteristic of the movement before 1925 was the "spring come, autumn go" tendency of the Chinese immigrants. Manchuria was for them, the great majority at least, a place of temporary employment. They left their homes, their families, behind them and following the Chinese New Year, particularly in March, and to a lesser degree in April and May, entered Manchuria as temporary or seasonal laborers, farmers, farm hands, mine workers, railway workers, dock hands in Dairen, or as miscellaneous labor functionaries. Towards the end of the solar year they began to return, especially to Shantung from which most of them came, and by January and February, just before the Chinese New Year the return movement was at its zenith, all of them eager to be back with their families in the ancestral home to spend the festive season of the New Year. Always the exodus from Dairen, for example, at this season before the Chinese New Year was far greater than the ingress which before 1925 was almost neglible for the season.

Obviously there is no way to estimate accurately the percentage of the immigrants who actually remained in Manchuria. Although most of them returned each autumn, probably above 75 per cent. of the number who entered in the same year, some would remain for two or three years and then eventually return to their homes and families. In 1925 and the years following, however, it was very noticeable that this whole characteristic changed radically.

Soya Beans in Open Storage, Dairen Wharf

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* Two organizations have made the principal statistical studies of Chinese immigration to Manchuria, the South Manchuria Railway Company, through its Research Department, and the Chinese Eastern Railway Company, through its Economic Bureau. Except where otherwise indicated in this study the writer's data have been prepared on the basis of figures compiled by the Research Department of the South Manchuria Railway. Principal among these published studies are three, two in the *Research Journal* and one in a separate brochure. All were prepared under the direction of Mr. K. Futamura, chief of the Labor Bureau of the Company, from whom much valuable information has been received in numerous interviews. These studies are: *Research Journal*, Vol. 6, No. 2, pp. 77-96 (February 25, 1926; ibid, Vol. 7, No. 1, pp. 96-107 (January 25, 1927). A translation into Japanese of the writer's report to the Chinese Government Bureau of Economic Information, Peking, *The Chinese Economic Journal*, July, 1927), appears in the *Research Journal*, Vol. 7, No. 8, pp. 167-198 (August 25,1927). For 1927 particularly, a summary statistical study of the Research Department of the S. M. R. recently published in Japanese (as are all the above) has been drawn upon, titled "Manchurian Settlers in 1927," 176 pages, Research Publication No. 70, November 20, 1927 (Dairen, S. Manchuria).

† Reports of the Railway Department and of the Economic Bureau of the Chinese Eastern Railway Company (Harbin) have been used in this connection. These are supplemented by a private memorandum from Mr. I. Pavloff of the Economic Bureau, February, 1928.

Bales of Beans Waiting for Shipment at Changchun

The numbers who departed during the months following October until the next March actually, even during the month before the Chinese New Year, actually were offset by the numbers arriving at Dairen, the principal port of entry for the immigrants. In October and November 1925, for example, many more immigrants arrived at Dairen than departed. Those returning from Dairen in 1924 had been 65 per cent. of the number who arrived during the year. In 1925, however, the percentage of returning Chinese had dwindled to 49 per cent., and in the following year, the increase to 52 per cent. was attributable to the fact that more returned by way of the South Manchuria Railway to Dairen than previously. Hitherto more immigrants had returned over the Peking-Mukden Railway than by the sea route from Dairen due to the fact that the South Manchuria Railway had not offered reduced rates for returning migrants. Interruption of traffic on the Peking-Mukden line, however, during 1925 and 1926 made it more convenient, in spite of the non-reduced rates on the South Manchuria Railway, to return by way of Dairen and the sea route to Shantung. In 1927 this tendency for the percentage of the returning Chinese to decrease was much more apparent. Less than fifty per cent. of the number entering through Dairen returned during the year.

But figures often fail to impress one as emphatically as the facts gathered in the field by personal observation, day by day, facts which even the casual observer in the ports of entry into Manchuria, especially in Dairen, could not fail to notice. During 1926 and 1927 not in numbers alone but in the very important fact that with these Chinese laborers came their families was the movement obviously quite different from previous years.

A spectacle sufficient to arouse many emotions in the mind of him who saw these home-seekers—for home-seekers they have come to be, these Chinese peasant folk from northern China, driven as they are from their ancestral home—a scene, whose human interest never lags even with daily observation of them as they come to Dairen by the thousands, a sight, which stimulates to inquire what conditions led them to forsake their old home for a new one and where their destination. For the past two years now these immigrants have come, men, women, children, babes and grandparents, and all that comprises the *family* which in China is not defined in terms of husband and wife, sons and daughters. From April to October, 1927, I observed them week by week in Dairen streaming down the gangplanks of the steamships which brought them from the Shantung ports, or disembarking from junks at the Junk Wharf in the old Russian city, each with a tag fastened to his heavy-padded cotton clothing, much as other live cargo from an ocean-going vessel. One naturally was impressed with the fact that, judged by the presence of the women and the children, and their luggage, not plenteous to be sure, but yet that which a Chinese carries when he moves from his home for another land, and more, occasional suggestions of their intending occupation in Manchuria, a well-worn plough share, a bit of wood intended perhaps for a scythe handle (as if there were no sturdy saplings in North Manchuria for scythe handles, and far better than the primitive, straight things that are so widespread in China), these were evidences of much more than seasonal migration on temporary labor jobs. Old women, grandmothers, with infants, their grandchildren, in their arms, such as these do not travel for the season alone.

Increase of Women and Children.—From observations made on some of the steamships which brought these immigrants to Dairen during 1927 it appeared that approximately 17 per cent. of the total arrivals were women and children.* That was the percentage on the *Tencho Maru*, a passenger boat of the Dairen Kisen Kaisha, which brought the writer to Dairen on April 6, 1927. This estimate proposed during July proved to be accurate: 17 per cent. exactly of all the Chinese immigrants who arrived in Dairen during the first six months of 1927 were women and children.

Of the total number of Chinese immigrants arriving in Dairen during 1925 only a little over 15,000 were women and children, or but 7 per cent. Of these 38 per cent. returned the same year. The following year the number of women and children arriving had increased to over 30,000, or nearly 12 per cent. of the total. Of these women and children who arrived at Dairen in 1926 only 23 per cent. returned during the year (*i.e.* percentage of the number, perhaps not the very ones who arrived by way of Dairen). From these years there has been a decided increase and the future will show an even greater percentage of women and children among the immigrants, thus indicating a tendency to more or less permanent colonization in Manchuria.

Motives for Migration to Manchuria

Why these Chinese are leaving their home provinces, principally Shantung and Chihli, in such great numbers is not to be answered in a single paragraph whose theme is the present famine there, though that fact does account for most of the sudden increase over former and more normal years. Far less is it possible to indicate in a paragraph why these immigrants proceed principally to Manchuria instead of in equal numbers to the northwest which too has its attraction for some. There are basic and permanent factors which in future will produce a constant movement to Manchuria.

Those who are familiar with the importance of the family in Chinese society and with the attachment to the ancestral soil which is a concommitant thereto, know that the Chinese does not leave his warm *k'ang* or the ancestral burial place without very good and strong reasons for doing so. In life and in death the Chinese attaches great importance to his ancestral home. Whoever has lived as a foreigner in China may have had many illustrations of certain of his Chinese friends claiming for their "home province" those from which their forbears came, perhaps three hundred years before. Grim evidence of this very consequential attachment to the ancestral soil may be seen in the slow moving stream of carts, drawn by horses, mules and oxen in tandem and abreast, southward bound, back from Manchuria to Shantung. These are the carts, with perhaps five plain wooden coffins lashed together, carrying those of the immigrants who are being brought back to be buried in their ancestral home. They have come over rough roads hundreds of *li*, perhaps even from North Manchuria, following the ancient cart route which winds north and south from the end of the Great Wall at Shanhaikuan. Few, indeed, those whose bodies are transported by railway. That would be a luxury.

The communal element in Chinese society is of first importance. It is the master key to an understanding of so much in Chinese economics and politics. In union the Chinese finds strength; alone he is weak. The Chinese farmer prefers his traditional environment, and it is only by force of compelling circumstance that he will go abroad. That is not so true of the merchant class, those who have migrated in such large numbers to the East Indies and environs. Not being an adventurer of the Western buccaneer type of the 15th, 16th, and 17th centuries, the Chinese forsakes his home principally for economic motives, and the farmer from the necessity of seeking a livelihood under circumstances less rigorous than are to be found at home.

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* For a study of this immigration movement to Manchuria previous to July 1927 see the writer's report for the Chinese Government Bureau of Economic Information, published as "Chinese Labor Migrations to Manchuria," *Chinese Economic Journal*, July, 1927 (Peking). 21 pages with appended tables. (Reissued as a reprint).

Basic Overpopulation of Shantung.—That the great majority, approximately 85 per cent. of those who came by way of Dairen in 1925, who migrate to Manchuria are from Shantung indicates that it is in Shantung where the struggle for existence is particularly severe ; this and the proximity to Manchuria, of course, account for the source of immigration to Manchuria. The basal condition underlying this enormous migration to Manchuria is the excessive overpopulation of Shantung and the phenomenon is but an expression of an inevitable adjustment between the economic situation in Shantung which arises therefrom and that which prevails in Manchuria. Although China as a whole can not be said to be overpopulated, there are certain portions of the country which assuredly are. One of these is Shantung. Shantung shares with the provinces of Kiangsu and Chekiang the unenviable reputation of being one of the three most densely populated provinces of China, this province having a population of over thirty millions, or approximately 550 per square mile, which is less than Chekiang with 600 and Kiangsu with 875 per square mile.* This, for an agricultural society such as prevails in Shantung and is characterized by small land holdings, a tendency to continual diminution of their size through the method of inheritance, and a condition where there are relatively few earners of incomes and many who consume them in each household, gives rise to a natural tendency for the population to flow into areas where the struggle for existence is less bitter, hence to Manchuria.

Internal Disorder in Shantung.—To this underlying cause for migration there are others attendant which account for the movement to Manchuria. The noticeable increase in numbers leaving for Manchuria in 1926, approximately 20 per cent. over the previous year, was due in part to crop failures during the year but more especially to the fact that conditions became unbearable for many as a result of the ravages of soldiers and bandits who, like insect pests, infested the province. The military confiscated the crops along with other property. Their tax collectors swarmed over the countryside levying arbitrary taxes in variety to tax the inventive genius of an Edison, particularly those devised by the régime of Chang Tsung-ch'ang. A depreciated and continually fluctuating fiat currency, the possibility of compulsory drafting of the men into military service, these and related causes drove thousands out of Shantung. Civil war in the vicinity of Tientsin during 1925 and 1926 caused a sharp increase in the numbers who entered Manchuria traveling from Lungkou, Chefoo and Tsingtao to Dairen by the sea route.

Crop Failures and Famine.—The summer of 1927 was particularly severe for the Shantung farmers. Soldiers, disbanded in consequence of the reorganization of the local armies following the campaign north and then the later attempt to exterminate the radicals from the ranks of the southern armies, many of these turned bandits. Tsinanfu, in the heart of the province, became a center of disturbance, even of banditry, even as in the previous year Tsingtao had been in the zone of banditry. Already suffering from these conditions, the widespread crop failures due to drought which followed in the autumn of 1927 drove the farmers and their families to desperation, and now in 1928 there exists in Shantung a famine whose severity has not been paralleled since 1902.

Reliable reports of the China International Famine Relief Commission show that half the *hsien* (districts) in Shantung are suffering in consequence of crop failures. In these areas about half (35 *hsien*) harvested crops less than 10 per cent. of normal, while in the remainder (30 *hsien*) nowhere did the crop equal half of normal production. Once again the busy Western world is made aware, too mildly to be sure, of the awful famine in China—houses pulled down to obtain fuel for warmth in the Shantung winter, or to be sold for food ; food prices soaring beyond the reach of purses with little money of value ; the same tales of hunger-crazed unfortunates eating bark of trees, chaff, roots and rodents ; of comely girls sold for $5 Chinese currency.† Those who have the means are attempting to leave, principally for Manchuria, 60 per cent. of the entire population of one district investigated by the Famine Relief workers having emigrated to Manchuria. In passing, it is interesting to note that much of the grain bought for relieving the distress is brought from Manchuria.

Such are the conditions in Shantung which result in the migration to Manchuria, progressively increasing especially since 1925. From this review of the situation in Shantung it is obvious that it would be impossible to give any adequate estimate of the number of the immigrants who might be classified as "migrant laborers," "permanent settlers," or simply "refugees." Accurate differentiation is impossible. It is possible, however, to note certain tendencies toward permanent settlement in Manchuria, some of which already have been mentioned, which are in distinct contrast to the former seasonal movement of laborers from Shantung, who, in great numbers, were wont to return before the Chinese New Year.

The Economic Magnetism of Manchuria

Sparse Population and Undeveloped Lands.—While basic overpopulation in Shantung and a variety of economic and social difficulties conspire to compel emigration, relatively sparse population in Manchuria and certain economic inducements draw the great majority of them to Manchuria rather than to Mongolia, for example. The *economic magnetism* of Manchuria may be said to consist mainly in the fact that it is still in many of its regions, especially to the north and northeast of Harbin and to the east of Kirin city, largely undeveloped.

Manchuria has a population of approximately 25,000,000, according to estimates made by the Chinese Postal Administration in Harbin during 1927.‡ If 364,000 square miles be taken as the area of Manchuria, which perhaps is the most accurate of several estimates, then the Three Eastern Provinces would have but 68 persons to the square mile. Shantung would thus appear to be eight times as densely populated as Manchuria.

But these general statements are far less important than the fact that in Manchuria settlement is widely diffused, the regions in the south, especially in the Liaotung peninsula and parts of Fengtien

Immigrants Just After Landing

Resting on a Dairen Street

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* These estimates are on the basis of the returns of the Chinese Postal Administration for 1923. The recent returns for the population of the several provinces of China contained in the report of the Chinese Postal Administration for 1926 show an increase of from one to nearly four millions in each of these three provinces. The total population of China is given as 485,508,838, truly an arresting figure.

† The principal facts of the severe famine in Shantung are contained in a report of the investigators sent out by the China International Famine Relief Commission, as published in *The Peking Leader*, January 3, 1928.

‡ *The Manchuria-Mongolia Year Book*, 1927, published in Dairen in Japanese, gives the combined population of Manchuria and Inner Mongolia as 27,825,000, that of Manchuria alone as 23,459,000 persons.

province, being already well settled, even tending to saturation. Industrialization in Manchuria has only begun. Heilungkiang province, by far the largest of the three, had but 12 persons to the square mile in 1920, while Kirin had 63 and Fengtien the very contrastive figure of 133 persons to the square mile.* To-day this contrast between Fengtien and Heilungkiang provinces is not as apparent as that though Heilungkiang remains very sparsely settled, and much more so in contrast with Shantung.

Naturally it is to North Manchuria, particularly into northern Kirin, north of the Chinese Eastern Railway and into Heilungkiang province where most of the immigrants are now destined and will continue to go in the future. The particular attractions in undeveloped lands which are to be found in the various parts of Manchuria will be characterized in a later section dealing with the actual dispersion and settlement of the Chinese immigrants in Manchuria. In passing, it may well be noted, however, that while perhaps two-thirds of the arable land of the whole of Manchuria is already under cultivation, in North Manchuria no such situation prevails. There it appears that only from one-fourth to at most one-half of the arable land is now actually under the plough.

Railways and Communication With Settlement Zones.—A second factor, independent of the relatively sparsely settled character of Manchuria, which facilitates the coming of Shantung Chinese is the network of railways in Manchuria. These communication facilities with and in Manchuria are far superior to those with Mongolia, or other areas to the northwest of Shantung. Manchuria to-day has some 7,000 kilometres of railway, or about half the total mileage of railways in China (including Manchuria).† Fengtien province, for example, ranks ahead of Shantung and Kiangsu (in which Shanghai is located) in mileage of railways. And more railways have been built in Manchuria during the last three years than in all other parts of China put together. In fact so rapid has been the railway construction in Manchuria that a railway map made one year is out of date the next. Over the principal railways in Manchuria these immigrants have traveled, particularly those spreading from the main trunk lines. They travel principally over the South Manchuria Railway and the Peking-Mukden Railway from the south, and either continue on the Chinese Eastern Railway from Changchun north to Harbin, or disperse to the west over the Ssupingkai-Chengchiatun, Chengchiatun-Taonan and Taonan Angangchi lines, or to the east over the Changchun-Kirin Railway, the Mukden-Hailungcheng, the Kaiyuan-Taolu, and the Kirin-Tunhua extension. If to these be added the smaller spurs of railway branching from the main lines, one can form some idea of the network of communications which enables the immigrants to spread out into the undeveloped regions. The relative importance of these lines as carriers of immigrants will be discussed in a later section.

To communication by rail should be added that by boat on the principal rivers as well as the overland cart routes. Both are important, especially once the immigrants have entered over the railways. But of the rivers there is but one which is of paramount importance, that the Sungari, and since its service as a carrier for the Chinese immigrants is principally in North Manchuria, it will be characterized along with North Manchuria as a settlement zone.

Comparative Peace and Order of Manchuria.—A third factor in Manchuria which invites immigration from Shantung particularly is the fact that, in contrast with the continual state of insecurity of life and property in Shantung, in Manchuria there has been since the days of the Russo-Japanese war (1904-05) a semblance of order and a degree of peace. One does not expect perfect peace anywhere in China these days, even in Manchuria. Elsewhere in China there have been periodic and at times long continuous civil wars and disturbances since the overthrow of the dynasty. In Manchuria, however, even during the trying times of the deposition of the Manchus there was practically no interruption of order and consequent endangering of life and property. The factors which have brought this about in Manchuria are irrelevant here but they do serve to explain why there has been no serious interruption of traffic on the principal railways of the Three Eastern Provinces. Moreover, Manchuria has been off the path of military progress to Peking, isolated as it is beyond the Great Wall.

But it should not be inferred that Manchuria has not suffered indirectly from the internal disorders of the rest of China, nor that within her boundaries banditry or other civil commotion has been stamped out. There are specific portions of Manchuria in which lawlessness by bandit-soldiers or soldier-bandits, or even farmers on forays for loot in the season of high *kaoliang* (as east of Liaoyang are of frequent occurrence. The writer postponed a trip down th Sungari river from Harbin in the summer of 1926 for justifiabl reasons. The most recent noteworthy exception to the genera quietude of Manchuria, however, was the outbreak of the *Ta Ta Hui* (Big Sword Society) about Tunhua, the terminus of the new Kirin-Tunhua Railway being built under Japanese management a a Chinese Government Railway on the same basis as the Changchun-Kirin line, this being the first section of the projected line t the Chosen border. The serious consequences of the protest of the *Ta Tao Hui* near Tunhua against the arrogance and inhumanity of the officials and soldiery, and their consequent alliance with bandits in the vicinity not only has brought on retaliation but has actually interfered with the coming of immigrants to this section. The civil governor of Mukden actually stopped temporarily the transportation of immigrants to this region over the Mukden-Hailungcheng line on the ground that numerous immigrants were reported to have joined the Big Sword Society. But this is but an incident of only passing importance ; nor do these occasional disturbances alter the truth of the general statement that Manchuria is in a far happier state than Shantung. Passenger traffic over the South Manchuria Railway has never been interrupted, nor has that on the Chinese Eastern Railway between Changchun and Harbin, with one or two exceptions, since the days when Mr. John L. Stevens was chairman of the Inter-allied Technical Board and Mr. Boris Ostroumoff was manager of the Chinese Eastern Railway. The economic hardships resulting from the constant draining of incomes through exorbitant tax levies and from the miraculous flights toward vacuum of the hyper-inflated currency, *fengp'iap*, are not insignificant. They aggravate the immigrants problems.

Contributing and Special Causes of Immigration.—To the basic causes which encourage emigration from Shantung, and to the three principal reasons for migration to Manchuria, namely, (1) the sparseness of settlement and the presence of undeveloped land, (2) the convenient communication facilities, and (3) the comparative security for life and property in Manchuria, should be added those which now or in years previous have influenced the coming of Chinese immigrants into Manchuria. These are several and of varying importance.

What in the British Empire has been characterized as " induced settlement " is not characteristic of Manchuria. To be sure there are many illustrations of labor recruitment, of official encouragement, or of actual subsidization of specific settlement enterprises. But, on the whole, the movement is a spontaneous one, in its essential character quite independent of artificial or organized encouragement or assistance.

Characteristics of the Seasonal Labor Migration.—In the days before 1925, and specially after 1918, when there was an actual dearth of laborers for certain industries, notably at the Fushun coal mines, a combination of factors led to encourage Chinese from Shantung and Chihli to migrate to Manchuria, most of them solely for seasonal labor. The seasonal character arose out of two facts, the desire of the laborers to return by the Chinese New Year, and the fact that in many cases to remain through the winter would have been impossible. The work itself was seasonal.

Before the great rush of 1925 and following, brought on by the rather exceptional situation in Shantung, perhaps the great majority of the Chinese labor migrants had a fairly definite idea of where they were going and under what conditions they were to serve. Family and friendly ties, by report of returned laborers or by correspondence, served to inform them of conditions in Manchuria. In April, 1926, I found on board the steamer which carried me to Dairen that among the two hundred and thirty immigrant passengers most of them knew the general character of the work they were to take up, some on the road beds of the new railways in Kirin province, some to remain inside the South Manchuria Railway zone, some to become farmers. Of these there were a few who had come even from Honan. Most of them had heard through returned migrants of available work or lands at attractive purchase or rental rates, but of these latter those who actually intended to obtain land at once were few.

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* *Economic History of Manchuria.* p. 7. (Seoul, Chosen, 1920).

† For a study of the railways in Manchuria in their relation to economic resources see the writer's report for the Chinese Government Bureau of Economic Information (Peking), published as " The Economic Bases for New Railways in Manchuria " in *The Chinese Economic Journal*, Vol. 1, No. 4, pp. 324-335 (April, 1927) ; reprinted in *The Far Eastern Review*, May 1927. (Translated into Japanese by the Traffic Bureau, Department of Railways, Tokyo, in " Foreign Railway Research Materials " under the title " Manchu Shinsetsu-tetsudo-no Keizai-teki Konkyo." June 20, 1927).

Not all the immigrants to Manchuria are farmers or farm hands, though they are in the great majority naturally. A notable exception is that of the merchant class who have migrated from three districts in Chihli province, Lao-t'ing, Lan-hsien and Ch'ang-li, on the coastal side of the Peking-Mukden line south of Shanhaikuan. This section of Chihli, very much in contrast, to most of Shantung, is rather more commercial than agricultural, Ch'ang-li city being a commercial center of great prosperity where considerable wealth has been amassed through the generations and is kept snugly within the protective arms of the local bankers' guild. A local resident recalled to me that since his childhood he had heard Manchuria spoken of as a " Ch'ang-Lan-Lao colony," referring to the number of merchants who had gone from these three *hsien* to Manchuria, especially to Changchun, and to other places such as Harbin, Chengchiatun, Paiyintalai and Taonan. But these merchants, permanent colonists as they are, are yet so much in the minority that they are not characteristic of the migration as a whole.

Labor Recruitment for Mines and Railways.—Among the purposes for which a well-organized system of labor recruitment was applied previous to 1925 were three, (1) mine labor, especially at Fushun Colliery, (2) seasonal and temporary labor on new railway construction, and (3) dock laborers for the Dairen Wharves. Recruitment of laborers in Shantung as wharf hands in Dairen has been discontinued as it is no longer necessary to encourage Chinese to work there. The demand is now far less urgent than the supply, for the conditions of labor at the Dairen wharves are exceedingly attractive to these Chinese laborers. Incidentally, a survery of wharf laborers in Dairen made during 1925 showed that approximately 70 per cent. of them came from the farm. Regardless of the occupation for which the majority of immigrants are destined in Manchuria it is important to remember that most of them come with only the limited vision and experience of the farm. The absorption of immigrants for labor at the Dairen wharves is to-day inconsequential. The same may be said for the whole of the Liaotung peninsula as this section of Manchuria is now well settled by Chinese, at least where settlement is at all desirable. Much of the Liaotung peninsula is inferior in natural soil fertility.

For a period of five years a recruitment system was applied by the Japanese for securing miners and mine laborers at Fushun. The shortage of miners at Fushun coal mines in 1918 which was the immediate outcome of a period of rapid expansion of mine capacity necessitated the establishment of recruitment stations in Shantung. Through them principally, the following numbers of laborers were recruited for the Fushun Colliery : in 1918, 10,874 ; in 1919, 16,897 ; in 1920, 16,516 ; and in 1921, 15,239. In the following year the number fell off to but a few over a thousand and in no year since has the annual number recruited for the Fushun Colliery exceeded five thousand. But the form of the recruitment system remains, seven Japanese offices being maintained in 1926, three in Shantung (Tsinanfu, Chefoo and Tsingtao), and four in Chihli (Chaoyang, Lingyuan, Chinhsien and Tientsin). Formerly these numbered ten or twenty according to the needs of each year. The manner of recruitment through the " *oyakata system* " is too complex to conrider here.[*] These were further reduced in 1927.

The construction of new railways in Manchuria has attracted a considerable number of the immigrants from Shantung. During the building of the Chengchiatun-Taonan line, the Taonan-Angangchi line, the Kirin-Tunhua, and the Mukden-Hailuncheng lines, laborers were required for the menial tasks of grade work and large numbers came to Manchuria for the purpose, some to remain as farm hands, others to return with the coming of winter or the termination of their jobs. A part, too, naturally, are absorbed for semi-permanent section work on the lines.

Official Encouragement of Immigration.—When once the principal motives underlying the movement of immigrants to Manchuria are understood one is better able to evaluate the part which Chinese officialdom, from the Central Government in Peking to the district magistrates in the provinces, have played in encouraging settlement. In the Manchurian provinces local officials have announced the opening of available lands for settlement under terms sufficient to attract even the canny Chinese. From time to time, over a period of nearly twenty years now, posters and proclamations have been posted not only in Fengtien, Kirin and Heilungkiang, but in Shantung, Chihli and other provinces announcing special facilities for settlement, lands at low purchase or rental figures and provisions for temporary assistance of the immigrants proceeding to particular districts. But it is in making certain arrangements to facilitate the transportation of the immigrants to Manchuria, particularly over the Peking-Mukden Railway and the connecting lines in Shantung and Chihli, that official encouragement has been of special importance.

Even before the overthrow of the dynasty a definite official attempt was made to encourage colonization in Manchuria. In 1910 Duke Tsai Tsê, then the president of the Board of Finance, arranged that funds should be drawn from the national treasury to defray half the expenditure required for transportation and introduction of settlers into Manchuria. The rudiments of a colonization plan were drawn up by the provincial authorities in Manchuria and Viceroy Hsi-liang, in pursuance of that plan, addressed circulars to the chairmen of the provincial assemblies in Manchuria requesting their assistance in the project. The viceroy referred to the maturity of the railway schemes between Taonan and Liaoyuan as well as the Chinchow-Aigum project and urged the representatives of popular interests to encourage settlement in anticipation of the building of these proposed lines. The lines were not built but the immigration continued.[†]

In 1913 another interesting project was initiated by an organization termed the Colonization Association to encourage settlement in Manchuria. The Shantung branch of the association proposed the founding of a colonial bank with headquarters at Tsinan, Shantung, and a branch office in Kirin city, Manchuria. The avowed purpose was to construct housing facilities for the immigrants in Kirin province, and to advance funds at rates of interest or usury necessary to give the settlers a start, especially their first year. Whether anything came of this plan is doubtful, but the Colonization Association did request the Ministry of Communications in Peking to undertake conveyance of the immigrants from Shantung to Manchuria free of charge. In modified form that provision was eventually made by the railway department of the ministry.

Again, two years later the National Senate in Peking approved the establishment of a colonization superintendent's office to be opened at Chihfeng to encourage settlement in the region about Chengchiatun (Liaoyuan prefecture, Fengtien province, west of Mukden). It was pointed out during the discussions that such settlement would not only serve as a useful bulwark against " exterior invasions " but that through increase of agricultural production it would be very desirable to receive the extra taxes which might thus be levied.

It was not until 1922, however, that any statesmanlike step was taken by the Peking Government to encourage immigration to Manchuria. Hitherto most of the Chinese immigrants to Manchuria had been males, their families having been left behind. From this numerous evils resulted. To correct this and to encourage permanent settlement in Manchuria the Ministry of Communications drafted plans for allowing a substantial reduction of railway fares for women and children going to Manchuria. The plan was doomed to sudden failure, however, for the instability of the Cabinet resulted in changes in the ministry's personnel, and the plans were completely disrupted. Since 1922 several similar attempts have been made to facilitate migration not only to Manchuria, but to Chahar, Suiyuan, Jehol and Mongolia, by granting low fares on the Peking-Mukden and Peking-Suiyuan lines.

By 1925, however, in spite of internal political disorder during the years intervening, the Ministry of Communications promulgated " Regulations for the transportation of emigrants to the Frontier Provinces at reduced rates on the Peking-Mukden and Peking-Suiyuan Railways," drafted for the purpose " of encouraging emigration of laborers and farmers and their families to Manchuria and Mongolia." (Article 1). For the purpose of these regulations a " family " was definite to include " grandmother, mother, aunts, sisters-in-law, wife, sisters, daughters, and nieces only." The schedule of reduced fares effective during 1925 was given as indicated : Tientsin to Mukden, or Yingkou, Yuan $4.00 per passenger ; Talingho to Mukden, $1,40, to Yingkow, $1.00. Children under twelve were carried free. So also with agricultural implements brought by the immigrants below a certain maximum weight.

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[*] A brief treatment of this system of labor recruitment may be found in the writer's report in *The Chinese Economic Journal*, July 1927.

[‡] In 1909 and 1910 over a hundred thousand immigrants arrived at Yingkou (Newchwang). The back files of *The Manchuria Daily News* (Dairen English-language newspaper) for these years have been drawn upon for information.

Contemporary with the announcement of special tariffs, an Emigration Bureau (more properly a recruiting office) was established under the auspices of Marshal Chang Tso-lin in Tientsin (at Popei) for the purpose of recruiting and transporting to Manchuria the unemployed and the poor of Chihli province. The Bureau announced that it would provide traveling expenses and certain allowances for intending settlers who would reclaim Manchurian waste lands.*

Recently nothing has been done by the Peking authorities, except to provide for reduced railway rates over the Peking-Mukden Railway, for encouraging immigration to Manchuria. The officials in the provinces, however, have taken up the task with varying motives, an appraisal of which might better follow a brief characterization of some of their methods.

Of these settlement encouragement schemes that widely advertised by the district magistrate of Lo-pei in Heilungkiang province is a fair illustration. During the spring and summer of 1926 the magistrate, acting in co-operation with his superiors, particularly with the encouragement of General Wu Chun-shêng, military governor of the province, caused proclamations to be posted in Fengtien, Chihli and Shantung provinces inviting immigrants to settle on new lands in Lo-pei hsien, said to comprise over 200,000 *hsiang* (a *hsiang* equals ten *mou*), located far north in Heilungkiang province near the confluence of the Sungari with the Amur river. The proclamations, one of which was characterized for me by a farmer in Chihli province, set forth among other things, land available free of charge for settlers who would break the sod and plant grains or rice, housing furnished without charge for the first year, financial assistance to feed their families, and free use of agricultural implements. Although this particular district is situated very far to the north and is not as readily accessible as some of the others opened to settlement by new railways, and in spite of the fact that the winters on the Amur are at times very severe, considerable numbers of farmers both in Shantung and Chihli took advantage of the offer. What became of these settlers is extremely difficult to say now ; the time is too short ; the region is not readily accessible for investigators. Until those who have had the experience of a season or two of trials here in Lo-pei district return or give information there is no way of getting reliable data. The project of settlement in this part of Manchuria, however, is extremely important as it is here in the Lower Sungari Settlement Zone where the future will see truly great development.†

In the summer of 1927 several local authorities in each of the Three Eastern Provinces announced lands available for settlers at inviting terms. Mo Teh-hui, civil governor of Fengtien province, announced at the opening of the immigration season in 1927 that free lands were available and would be given to settlers under the most liberal conditions. A special effort was made by the *taoyin* (prefect) of Taonan, to the west of Mukden and in the vicinity recently opened by the new railways toward Tsitsihar, to absorb in the six districts under his jurisdiction the numbers specified by Governor Mo as desirable to settle there. The governor's instruction declared that they ought to absorb 12,000 of the immigrants about Taonan city, and that the chambers of commerce should provide relief.

Care has been taken to characterize these " encouragement schemes " of the local officials in Manchuria in order to show how generally void they are of practical plans for colonization, for assistance of the immigrants to surmount the often serious obstacles of their first months or year in Manchuria, or of well-organized methods for facing the problem of future settlement. It is but natural that many of the immigrants should become victims of sharpers who prey upon the weakness of the newcomers, their poverty contributing to the ease with which they can be manipulated. Privileges widely proclaimed have been withdrawn in certain cases once the immigrants arrived at what they had thought was their destination. A large group of Shantung immigrant laborers were left " high and dry " at Fushun upon their arrival, in 1927 the individual responsible for having made the arrangements to bring them there, ostensibly for work in the Fushun Colliery, having disappeared. Eldorados proved fiascos in Heilungkiang where the lure of gold said to be for the washing in placer deposits near the Sungari had misled the immigrants. Lands free of charge occasionally proved but inducements, no more. And the suffering of the immigrants not only on the way but after having found work has been increased by the precarious condition of the paper currency of the Manchurian provinces. Moreover, it is quite obvious that many local officials have found in this helpless mass of humanity, many of them refugees from Shantung famine, a fine opportunity to fleece them of what little they do possess or are capable of producing. They see in their settlement, however, an opportunity for filling their officially-private wallets with income in the form of taxes arbitrarily levied. More immigrants means more manpower, more potential strength.

In view of these occasional conditions it is indeed gratifying to find so much actual good will among many of the provincial and local officials for their unfortunate countrymen. Considerable has been done to relieve distress. Many of the land inducements are *bona fide*, and however selfish may be the intent of the officials they have brought relief to hundreds of thousands of the Chinese immigrants who find Manchuria so much less rigorous than the place from which they have come. Many of the official proclamations and plans are but formal and verbal, having little of practical value. They bear a characteristic weakness of administrative methods in China. The form having been executed, the fact, ostensibly to be achieved thereby, is assumed to have been achieved. But the complex character of systematic settlement does not lend itself to solution by mere paper proclamation. Official altruism, administrative ability and a vision of the future are essential to success in settlement projects as in the other affairs of government. The problem of settlement in Manchuria is destined to be complicated by this fundamental weakness. If the local officials have assisted in promoting permanent settlement in Manchuria it has been done in the majority of cases not with vision but with a motive more immediate and personal. The settlement schemes of Viceroy Hsi-liang and some of his day would seem to be worthy exceptions.

NON-OFFICIAL COLONIZATION PROJECTS.—While there has been little of the nature of " induced settlement " in Manchuria and the part which Chinese officialdom has played in connection with colonization has been generally but haphazard and temporary, there have been a very few attempts of an experimental nature to organize groups of Chinese farmers for settlement in a body in specific areas of Manchuria. The China International Famine Relief Commission has been interested in such projects though as yet little of consequence has been accomplished. The commission besides giving its attention to immediate and urgent relief in times of dire famine, as at present in Shantung, has devoted itself rather more to such tasks as road building and economic improvement in the famine areas, a most commendable program and of ill-appreciated service. The experiences of Professor Bailie and his famine refugees in Manchuria were not encouraging. Bandits and predatory soldiery were a constant menace, while, to quote the late Major Morgan Palmer, who was so intimate with the subject of settlement in Manchuria, " the intractable and unappreciative disposition of the colonists themselves, led to no more happy results on the fine tract of land in Kirin province which was officially set aside for his experiment."‡ The colonization project in Heilungkiang province undertaken by Mr. L. S. Palen, formerly of the Chinese Customs Service, with the encouragement of American officials, principally Mr. Charles R. Crane, and the late Major Willard D. Straight, once American consul general in Mukden, and the financial assistance of the newly formed Manchuria Development Company was the first well-organized, scientific and practical effort of experienced directors to develop Manchurian agriculture with American methods but with Chinese settlers as farm hands. The failure of the project was due in part to exceptional circumstances, such as floods throughout the Sungari valley, but it is that experiment and the one of Mr. Palen's successor, the late Major Morgan Palmer, that together furnish the most informative and interesting body of fact of value in connection with future projects for subsidized private colonization projects in Manchuria.

An interesting undertaking for settlement of famine refugees in Heilungkiang province has been initiated by a missionary group, the Shantung Missionary Association. Land was procured in Heilungkiang north of the Sungari for the purpose at very low purchase rates and some official co-operation was secured. The funds for the purpose of sending the immigrants with their families to North

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* *The Chinese Economic Bulletin* (Peking), No. 208.

† Part II of this article will deal with "Settlement Zones and the Economic Effects of Immigration to Manchuria." The relative importance of the Lower Sungari Zone will there be considered in detail.—*To be published in July.*

‡ Major Morgan Palmer " Colonizing in Manchuria " (Undated reprint from *The China Weekly Review*).

Manchuria, however, have been disbursed by the mission body. So great was the interest on the part of the poor Shantung unfortunates to be sent to Heilungkiang under these auspices that instead of the seventy who were sought by the organizing members of the mission over a thousand crowded the mission property in Tsinan, Shantung, in February, 1928, in the hope of being sent to Manchuria. Naturally the situation taxed the ability of the mission group to handle them as they were almost entirely destitute. The local Red Cross and the Famine Relief agents provided immediate relief. What will come of this project to settle farmer immigrants under Christian mission auspices in North Manchuria remains to be seen. It does suggest a service as well as a fundamentally remedial measure for relieving the now perennial hardships in overcrowded Shantung.

Steamship Facilities and Encouragement of Immigration.—The immigrants to Manchuria travel by two principal routes, that overland by way of the Chinese Government Railways from Shantung and Chihli, and that by sea, either by steamships or junks. By far the larger part of the immigrants who come to Manchuria by sea travel on steamships, though the numbers who annually come by junks is sufficient to complicate estimates of the total. Steamship services from Tientsin and the three Shantung ports, Tsingtao, Chefoo and Lungkou, which are the principal ports of departure for Manchuria, are frequent both because of the produce cargo passing between Shantung and Manchuria and the traffic in these immigrants. These steamship lines have for years made special arrangements with the railways and with individuals or institutions interested to obtain a " consignment " of laborers to come to Manchuria and have thus operated to encourage the immigration to Manchuria. To them " coolies are cargo," to quote an agent of one of the lines in Dairen in reply to my inquiries. As such they are very desirable for they are automotive : they walk on and off the ship, thus saving handling charges. Nor are they particularly fragile. Consequently the companies competing for the carrying trade in immigrants find them a source of valuable income, even though the transportation charges, as compared with ordinary passenger rates, are low.

Of the total of over 500,000 immigrants who came to Dairen from Shantung and Chihli in 1927 over 80 per cent. were carried by steamships of the following four companies : Dairen Kisen Kaisha (Japanese), Chêng Chi Kung Ssû (Chinese), Tanaka Trading Company (Japanese), and the Awakyodo Shipping Company (Japanese). A half dozen other companies, including the Osaka Shosen Kaisha, the Nippon Yusen Kaisha and the Hsuan Hsing Kung Ssû carry smaller numbers, and are of lesser importance.

Until recently at least, conditions of this traffic in immigrants were not particularly severe. Fares were low, the actual charges being variable, to be sure, though ordinarily far less than the quoted third class rate. Ordinarily the fare actually charged immigrants from Tsingtao to Dairen, though quoted as Yen 7.00, was about Yen 2.00. From Lungkou or Chefoo it was less. In groups and under contract the per capita charge was less. From Tientsin the rate is less variable, however, as there is no competition for the one line operating between that port and Dairen. But the whole carrying trade may be characterized as a game of cut-throat competition in spite of the existence of a paper rate agreement between the lines operating in the traffic. Fares vary with the condition of other cargo—a vessel well-supplied with cargo for Dairen is in a position to charge excessive rates to the immigrant passengers, and so it does. If the cargo traffic is light, immigrant passengers are desirable, hence their charges lower. The forwarding agent will confront the inquirer thus: " How many coolies have you ? " You give your number, and you get your own rate. This is the real situation which leaves much to be desired even under normal conditions.

But the unparalleled congestion of refugees at the docks in Tsingtao especially has aggravated the problem during the past two years. It was the custom to crowd the boats far beyond their capacity, often double their proper maximum, and this occurs even now though the practice has been partly checked by the action of the Chinese authorities in the ports of departure who inspect the ships before clearance. A most unfortunate incident which occurred during 1927 has furnished an object lesson and has served to better the situation somewhat. On September 17 the motor boat " Gentoku Maru," while proceeding to Manchuria from Tsingtao with twice the number of immigrant passengers permitted by the regulations, was inundated and over two hundred of the passengers lost their lives.* This served to improve matters for a time but violations of the regulations regarding loading beyond capacity are still frequent. On March 3, 1928, the " Hai Shun," a Chinese vessel, was indicted at Dairen by the Japanese authorities for carrying double its capacity of a little less than a thousand. Since then there have been other violations.†

Manchurian Railways and Facilities for Immigrants.—A vital factor in encouraging immigration to Manchuria is the part which the Manchurian railways have played, of which lines three are of major importance, the Peking-Mukden Railway, the South Manchuria Railway and the Chinese Eastern Railway. The rôle of the Peking-Mukden line has already been suggested in connection with the various regulations promulgated by the Ministry of Communications in Peking for reduced fares to Manchuria. That line was in fact of first importance before 1925 but the interruption of traffic due to the control of the line by the military during the attempt of Marshal Chang Tso-lin to take Peking interfered with the transportation of the immigrants from Shantung and Chihli and caused a sharp increase in the number who proceeded by boat to Dairen, and in part, by the South Manchuria Railway north to Changchun, the junction with the Chinese Eastern. Moreover, the Peking-Mukden Railway has usually carried the greater percentage of the returning seasonal laborers by virtue of the fact that the line offered reduced rates back to their homes, a practice which has never been followed by the South Manchuria Railway. Over 200,000 immigrants were carried to Mukden by this line during the first six months of 1927.

The South Manchuria Railway, as the one line in Manchuria which has remained completely independent of Chinese control, has been able to pursue a consistent and systematic policy with regard to transportation of these Chinese immigrants, especially from Dairen. It has been the practice for years to offer reduced rates for the seasonal laborers both from Yingkou and Dairen. Furthermore, the railway by virtue of its intimate association with the Fushun Colliery and the other enterprises, such as new railways, which demand laborers has followed a policy of co-operation in granting reduced through rates all the way from the port of departure. For all passengers disembarking at Dairen or Yingkou the South Manchuria Railway furnishes the natural communication with points north, with Ssupingkai and the lines which branch into western Manchuria, with Mukden and the Chinese line to Hailungcheng, with Kaiyuan and the light railway to Taolu, and with Changchun, the junction with the Chinese Eastern Railway and the east bound route over the Changchun-Kirin Railway to Kirin and beyond to Tunhua. It is an interesting fact, however, that from Dairen a large percentage, perhaps half, of the immigrants even now proceed north on foot, along the railway right of way, this on account of their extreme poverty and their inability to pay even the reduced fares.

Since 1918 the South Manchuria Railway Company has offered regular reduced rates to immigrants traveling north on their lines from Dairen and Yingkou. The regulations enforced in 1919 were continued in effect until 1925 when a new schedule of fares was instituted which were applied until April of 1927. In general it may be said that the amount of the reduction in force in 1925 varied from 35 to 40 per cent. of the regular third class fare. Under this accommodation the immigrants travel in a special class, usually in goods cars or ordinary box cars. Briefly, these fares from Dairen are as follows ; the percentage of the reduction being given : To Mukden, Yen 3.75 (61 per cent.) ; Changchun, Yen 7.10 (65.2 per cent.) ; Ssupingkai, Yen 6.00 (66 per cent.) ; Fushun, Yen 4.10 (61 per cent.) ; Taonan, Yen 8.40. From Yingkou the reduced fares are as follows : To Mukden, Yen 1.75 ; Changchun, Yen 4.90 ; Ssupingkai, Yen 3.80 ; Fushun, Yen 2.20 ; and Taonan, Yen 6.20.

In addition to these regular reduced fares for men a special tariff has been put into force for women, children and aged persons. By special regulations of March 30, 1927, enforced after April first, the South Manchuria Railway provided that all persons under fifteen and over sixty should be carried free of charge, and that other women and children should be transported at a reduced rate of 50 per cent. of that in force for the men.

In spite of these reduced fares it is interesting to note that so desperate is the condition of many of the immigrants that they are without funds even for these very nominal fares. In 1924 but 14 per cent. of the immigrants who arrived in Dairen were carried by the railway at the reduced rates; in 1925 but 27 per cent. Some of course travel as ordinary passengers while others remain for a time in Dairen, though these are few. The great majority actually walked, men, women and children, carrying infants and even grandmothers on their backs at times. In 1927 out of over 500,000 who landed at Dairen, 43 per cent. traveled north by rail paying the reduced fares. The suffering that so many of these immigrants endure on the long route north from Dairen, many of them actually walking the full 435 miles to Changchun, and even to Harbin, is heart-rending. Much of the suffering, too, seems almost inevitable, for the crush of immigrants is so great at Dairen that, in spite of the sincere efforts of both Chinese and Japanese in Manchuria to alleviate their distress, their numbers actually defy thorough relief.

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* *The Manchuria Daily News*, September 23, 1927.

† Ibid, March 3, 1928.

The Chinese Eastern Railway has also enforced reduced rates from Changchun to Harbin somewhat similar to the tariff schedules of the South Manchuria Railway. But because Changchun has been the worst point of congestion in Manchuria and at the height of the season thousands upon thousands have been dumped there without pre-arrangements for travel farther north, their problem has been a knotty one. Fortunately certain abuses attached to the sale of tickets by inn-keepers in Changchun were corrected in 1927 and greater attention has been given to the matter of supplying extra goods cars to carry the immigrants north during the rush season from February to May. The Chinese Eastern Railway also provided in 1927 that immigrants over sixty and under ten should be transported free of charge.

Both railway companies have been forced to give the matter of transporting these immigrants more attention and as a result by providing temporary housing in Changchun and Dairen, by taking greater care in medical examination, and providing water on the trains, it is probable that many evils will in future be corrected. Special immigrant trains have been run on the South Manchuria Railway since March 1927. It is worthy of note that, in spite of the reduced tariffs now in force, both railways are making handsome profits from the transportation of these large numbers of Chinese immigrants into Manchuria. It is to their interest to foster the movement not only for the fares but for the bearing on future produce freight.

THE SHANTUNG GUILD AND IMMIGRATION TO MANCHURIA.—One of the most commendable examples of the service of provincial guilds in China which has come to the attention of the writer is that of the guild of Shantung men in Manchuria. The great majority of Chinese who have come to Manchuria in the last few decades are from Shantung. Of the immigrants coming to Dairen in 1925, 85 per cent. were Shantung emigrés, a total of approximately 216,000 for the year. The existence of so great a number of fellow provincials in Manchuria is a powerful inducement to draw immigrants there instead of to regions, such as Mongolia, where the provincial guild is comparatively weak or non-existent. The guild, therefore, in itself encourages migration indirectly and by the intimacy of its contacts with the home province is an effective *liaison*, not illicit, between Shantung and Manchuria.

Besides performing the ordinary function of provincial guilds the Shantung organization in Dairen, for example, has taken the lead in providing relief for the many destitute who disembark from steamer and junk at the Dairen wharves. The Dairen guild, which represents nearly a hundred thousand Shantungese in the city, is particularly well organized and has its guild hall in Terauchidori in the Japanese section. During the early months of 1927 and again in the following year the guild raised large sums of money for the relief of the indigent immigrants, provided free food and lodging for the transients in Hsiaokangtzu, the Chinese section of Dairen, provided railway transportation for the more needy, and supplied many with millet and other food to be carried with them on the northward journey to their destination.

A conspicuous example of the influence of the Shantung Guild n Dairen appears in the fact that it was in response to a request of the guild that the South Manchuria Railway Company promulgated the special tariffs in March 1927 providing for free transportation for the aged and the children, as well as reduction by half of the fares for the women. The guild, however, had sought to have all the women carried free. In this work of offering relief to the immigrants the local Japanese organizations have taken an important part. Not only has the South Manchuria Railway made contributions both of money and other facilities by way of food and transportation, but the Japanese chambers of commerce in Dairen and Shokoshi (Hsiaokangtzu) have contributed large sums and co-operated with the Shantung Guild and the local Japanese newspapers to supply relief. Very welcome, indeed, would be the offers of other charitable organizations, including mission groups and relief societies, to assist in a work which besides being humanitarian would be so immediately productive.

(To be Continued)

America's Stake in China

"Of Chinese government bonds and other securities American investors hold approximately $20,000,000 worth. Of railway bonds and similar securities about $18,000,000 is held in the United States. American manufacturers have extended long-term credits to Chinese enterprises and the amount of these outstanding is another $10,000,000. Banks, trading concerns and others have an investment in lands, buildings and equipment in China running close to $30,000,000. There is therefore a total of some $70,000,000 of American money in business investments in China."

"This is exclusive of another sum that has been invested by another American interest in China. It is difficult to get reliable figures on the amount of money that is now represented in the missions, hospitals, schools and other religious, social, charitable, and cultural activities of American organizations in China. But the sum total would run close to the $70,000,000 of American business if it did not exceed it. This money, which has been contributed by thousands of people all over the United States, has a grip on the imagination of the American people far greater than many times the amount invested in business ventures could have. It has also a strong hold upon the imagination of the Chinese. And the amount devoted to eleemosynary purposes grows every year with little regard for the ups and downs of Chinese commerce or Chinese politics."

Henry Kittredge Norton in his "China and the Powers"

British Cotton Combine

Lancashire Textile Corporation, Combining 200 Mills Adopts the American Trust Idea and Japanese System of Co-operative Purchasing and Marketing

THE British cotton textile manufacturers have at last accepted the American trust idea and the Japanese system of co-operative purchasing of raw materials and marketing of finished products. Individualism amongst British manufacturers, all zealous of their own prestige and trade marks, have prevented any large scale co-operation that would cut down the overhead charges and systematize purchases and sales. As a result of this conservatism in the face of intense foreign competition, the American section of the great British cotton textile industry has lost 38 per cent. of its pre-war export trade and now faces ruin. Urged by the banks, and compelled to take action by the labor unions who refuse any further cut in wages, the British cotton mills have come together to save the industry. The new Lancashire Textile Corporation, a combine of 200 mills, is bound to make itself felt in the American cotton market and seriously compete with Japan in those countries where she has built up a profitable trade in the coarser grades of cotton textiles. Mr. Herbert N. Casson, writes from London for *The Wall Street Journal*, a most interesting report of the new combination. He says;

"The most important news recently in England, from the American point of view, is the report that the "American Section" of the English cotton trade has decided to organize a combine of spinning mills. The name of the new combine will be the "Lancashire Textile Corp."

It will be a holding company and is expected to begin with not less than 200 mills. Eventually, it may include twice as many.

(Continued on page 263).

Nanking's Foreign Ministers

Dr. C. C. Wu and Dr. C. T. Wang

Dr. C. T. Wang

Dr. C. C. Wu

THE foreign policy of the Nationalist Government, as we have pointed out in the May issue of the *Far Eastern Review*, has very seriously suffered from the incoherence of views in Nanking since the departure from China of Dr. C. C. Wu on his mission to Europe and America. While Dr. Wu was Minister of Foreign Affairs, he was faced by the accumulation of universal ill-will arising from the bombastic and, from very many standpoints, evil policy of Mr. Eguene Chen and Michael Borodin. Dr. Wu inherited from that régime, an isolated China, a China which had antagonized the United States, Great Britain, Japan and all the other treaty Powers in China and which was about to break off its relations with Soviet Russia. Dr. Wu took up his Ministry while Shanghai was an armed camp, entirely surrounded by barbed wire barricades, every entrance into the International Settlement guarded by foreign troops and with the largest armada of foreign vessels, ever known in China, lying in the Whangpoo River with their decks cleared for action. As he sat in the office of the Ministry of Foreign Affairs in Shanghai, British aeroplanes flew overhead, symbolic of the growing disrespect for the Nationalist Government among the Powers of the world. The split which had just taken place within the Kuomintang, separating Nanking from Hankow, placed the Minister of Foreign Affairs in a difficult dilemma when he sought to represent a united Nationalist China, and to make his position increasingly more complicated, the Nanking Incident had occurred before he had assumed office and he was faced with the unwillingness of the Powers to have any commerce with him until his Government had agreed to their demands. Yet, to have agreed to their demands, at that time, would have lost for the Nationalist Government the good-will of the Chinese people and would have imperilled their progress toward the unification of the country.

It was in such a situation as this that Dr. Wu adopted what his enemies have liked to call a negative policy. He did not attempt to use mass force to accomplish some small gain; he did not press for an immediate fulfilment of all of China's national aspirations nor did he involve himself in any serious controversy with the foreign Powers, because the essential fact which faced China at that moment was isolation and it took courage and foresight and great political daring to strive to win the good-will of the Powers without sacrificing the national integrity of China.

By the time Dr. C. C. Wu left office, to a very large extent, good-will had been restored. The Nationalist Government was in some form of contact with the principal Powers. More friendly relations between Chinese and foreigners in Shanghai had been established. It is true that Dr. Wu was not able to influence his Government to return the missionary property in Nationalist territory, but the fact is now known that he did everything he could to end an intolerable situation with regard to the seizure by Nationalist troops of foreign property. The lack of support which was given to Dr. Wu by the Nanking Government was largely due to increasing differences of opinion among the politicians in the Kuomintang, who were faced with the internal question of revising their political program, which had been written for them by the Russians, without destroying their party. The compromises which were inevitable in such a situation naturally led to political confusion, from which the Minister of Foreign Affairs was undoubtedly the greatest sufferer.

Dr. C. C. Wu left China on his mission largely because there was a group of Nationalist leaders who were opposed to the methods employed by General Chiang Kai-shek, but who regarded it as their duty not to interfere with his efforts toward unifying China. Mr. Hu Han-ming, Dr. C. C. Wu and Mr. Sun Fo and others, who found it difficult to co-operate with Chiang Kai-shek, thereupon, determined to give him a free hand by eliminating themselves from active politics. But on his trip to Europe and America, Dr. Wu has been serving the Nationalist Government, everywhere seeking to wear down antagonism which the Russian relationship had engendered. His appointment as representative of the Nationalist Government in Washington is a tribute by those who are not inclined to be politically his friends, to his unquestionable ability and integrity.

Form the standpoint of the Nationalist Government, Washington is, at the moment, a very important post because the Nationalists hope to break down the union among the

Powers through the United States. Whether they can accomplish this or not, they have, at any rate, selected as their representative in Washington a diplomat who has to his credit that he has never sacrificed his country nor, at the same time, has he ever served as a tool of the Russians to destroy the just commerce of foreigners in China. Dr. Wu combines the fine qualities of an old-time Chinese scholar with the training of the West in the schools of the United States and Great Britain. His father was one of China's greatest diplomats, Dr. Wu Ting-fang, who, for many years, was the Chinese Minister to the United States and whose book "America" is an exceptionally brilliant analysis of social and political customs in the United States.

Dr. C. C. Wu was succeeded to the post of Minister of Foreign Affairs of the Nationalist Government by Mr. Huang Fu, who did not excite tremendous enthusiasm. He has now been succeeded by Dr. C. T. Wang, who is a Rotarian and a Mason and a diplomat, well known to Americans. Dr. C. T. Wang has not achieved political prestige through the Kuomintang, but has, in recent years, rather been associated with the Northern Government, where he served as Chairman of the Shantung Retrocession Commission which secured the return of Shantung from Japan, the Sino-Russian negotiations which wrote a treaty with Russia and he was Chairman of the Tariff Conference which met in Peking and of which Mr. Silas Strawn was the American member. In recent years, Dr. Wang has been regarded as a member of Marshal Feng Yu-hsiang's party, but his acceptance by the whole Kuomintang at the present time as Minister of Foreign Affairs, is another step in the direction of national unification. It is too early to praise the work that Dr. Wang will do as Minister of Foreign Affairs of the Nationalist Government because he has just been appointed, but he has had a vast experience in this particular field and even those who have, in the past, not regarded him with favor, feel that he should have every support in the very difficult position which he now fills.

Japan's Memorandum to the League of Nations

Statement of the facts and circumstances of the collision between Japanese and Chinese troops at Tsinan

On May 28 the Japanese Government submitted to the Secretariat of the League of Nations at Geneva the accompanying statement setting forth the facts and circumstances attendant on the recent collision between Japanese and Chinese troops at Tsinan, for the information of countries belonging to the League.

1.—On January 3, 1927, Chinese rioters, instigated by extremists, made an attack in great force on the British Concession at Hankow, and, defying British efforts to hold them back, occupied it. A similar outrage was repeated at the British Concession at Kiukiang on January 6, 1927.

The Southern Army entered Nanking on March 24. The Communist troops belonging to it attacked the Japanese Consulate and subjected the Consul, members of his staff and Japanese residents to indescribable insults and also inflicted bodily harm upon them. The Communist troops looted the Japanese Consulate and almost all the houses of Japanese residents so completely that practically nothing was left in them. Similar or even more serious outrages were committed on the Consuls of and residents belonging to other countries, and British and American warships were compelled to open fire as a protective measure.

On April 3, in the Japanese Concession at Hankow, a gang of rioters, who, at the instigation of Communist agents, had been attempting to provoke disturbances, began by purposely insulting and striking a Japanese seaman who happened to be ashore. They proceeded to attack Japanese shops and to injure Japanese passers-by. The situation became so critical that most of the 2,500 Japanese living in the Concession left for Shanghai or for Japan.

In view of such incidents transpiring alike at Nanking and Hankow, the Japanese residents at Chungking, Ichang, Shasi, Changsha, Wufu, Kiukiang and other places on the Yangtze began to quit those places.

On December 11 a collision occurred at Canton between Communist and non-Communist groups of Chinese troops, and did not come to an end until the thirteenth. Fortunately, foreigners in the Concessions sustained no harm; but it is to be noted that the cruelty, pillage and massacre (including that of women) which distinguished this fighting among the Chinese troops themselves defied all description. Even after the fighting was over, efforts were made to wipe out the so-called Communists, some 200 being daily arrested. They were summarily shot, without any formality, at three places in the city which were made to serve as execution-grounds for the occasion. The total number of people thus put to death is estimated at 2,500.

2.—The above instances constitute only a few, and the most glaring, of the incidents that have occurred in China during the past year. The state of affairs which for the last few years has prevailed in that country is, broadly speaking, of a piece with them. Since the First Revolution civil wars have continually followed one another, and have made it difficult for any peace and order to be maintained at all. During the last few years the activities of the Communists have rendered the general conditions still more disturbed. At present the situation is such that foreign residents cannot depend, for the protection of their lives and property, on the Chinese authorities alone. It is inevitable, therefore, that Japan, a country contiguous to China, the interests of which are profoundly involved and many of whose people live there, should, if occasion should require, endeavor to safeguard her people and her vested rights by her own exertions on the spot.

3.—When recently the Southern Army commanded by General Chiang Kai-shek was advancing northwards from Nanking in the direction of Tsinan, Japan dispatched her troops to Tsinan for the protection of 2,000 Japanese residents there. It need scarcely be said that this dispatch of Japanese troops was a measure of self-protection rendered unavoidable by the above-mentioned state of affairs prevailing in China.

In spite of this precautionary measure taken by Japan, some Southern soldiers looted a Japanese house. This outrage originated the whole incident. The Southern troops then at Tsinan proceeded to attack the Japanese forces and residents at various places. They murdered over a dozen Japanese residents including women, and plundered over a hundred Japanese houses. It is to be sincerely regretted that these outrages compelled the Japanese troops to resort to force for the protection of the Japanese residents.

If it should be thought that the present deplorable incident would not have occurred but for the dispatch of Japanese troops to Tsinan, such a view would obviously be erroneous in the light of the above-mentioned incidents at Hankow and Nanking, occasions on which no foreign troops were present.

4.—The present dispatch of the Japanese troops is for no other purpose but to protect the lives and property of Japanese residents, and implies nothing approaching an interference with the military operation of any of the Northern or Southern forces, and the troops will be withdrawn as soon as the necessity for their continued presence ceases to exist, as was announced by the Japanese Government at the time they were dispatched.

When a disturbed state of affairs came into existence at Tsinan last year, the Japanese Government dispatched their troops to that district in June in order to afford the necessary protection to Japanese residents. As soon as the situation became such that the presence of the Japanese troops was no longer required, they were recalled, their complete withdrawal having been effected by September 8.

5.—The following is a résumé of the Tsinan Incident:

(*a*) The Japanese troops, which arrived at Tsinan between the latter part of April and May 2, 1928, established as the object of their protection an area containing about 80 per cent. of the Foreign Quarter, which constitutes the principal place of abode for Japanese, and erected defence works at two points therein.

On the other hand, following the withdrawl of the Northern troops from Tsinan on April 30, the Southern troops began to arrive on May 1 in large numbers. By May 2 the number of the Chinese troops in the Foreign Quarter and within the Walled City had exceeded 70,000.

General Chiang Kai-shek, Commander-in-Chief of the Southern Army, who arrived on May 2, proposed to the Japanese Commander that, as the Southern Army would by all means ensure the maintenance of peace and order, the Japanese troops might speedily withdraw, and the above-mentioned defence works be removed. Accordingly, the defence works were removed on the night of May 2, and some of the Japanese residents who had gone to places of safety returned to their homes.

(*b*) On May 3, at 9.30 a.m., the house of a Japanese by the name of Chohei Yoshifusa, was looted by regular soldiers belonging to the Southern Army. About 30 Japanese soldiers commanded by a lieutenant hastened to the scene. The plundering Chinese soldiers had fled to the neighboring Chinese barracks. From these barracks they fired on the Japanese soldiers, some of whom were wounded. The Japanese then responded to the fire.

On the outbreak of this collision, the Southern troops, with which Tsinan was crowded at the time, almost simultaneously began, at various points, to fire on the Japanese troops, to massacre the Japanese residents and to plunder Japanese houses.

(*c*) The Japanese troops endeavored to afford shelter and protection to the Japanese residents, and also to drive the Southern troops out of the Foreign Quarter or to disarm them.

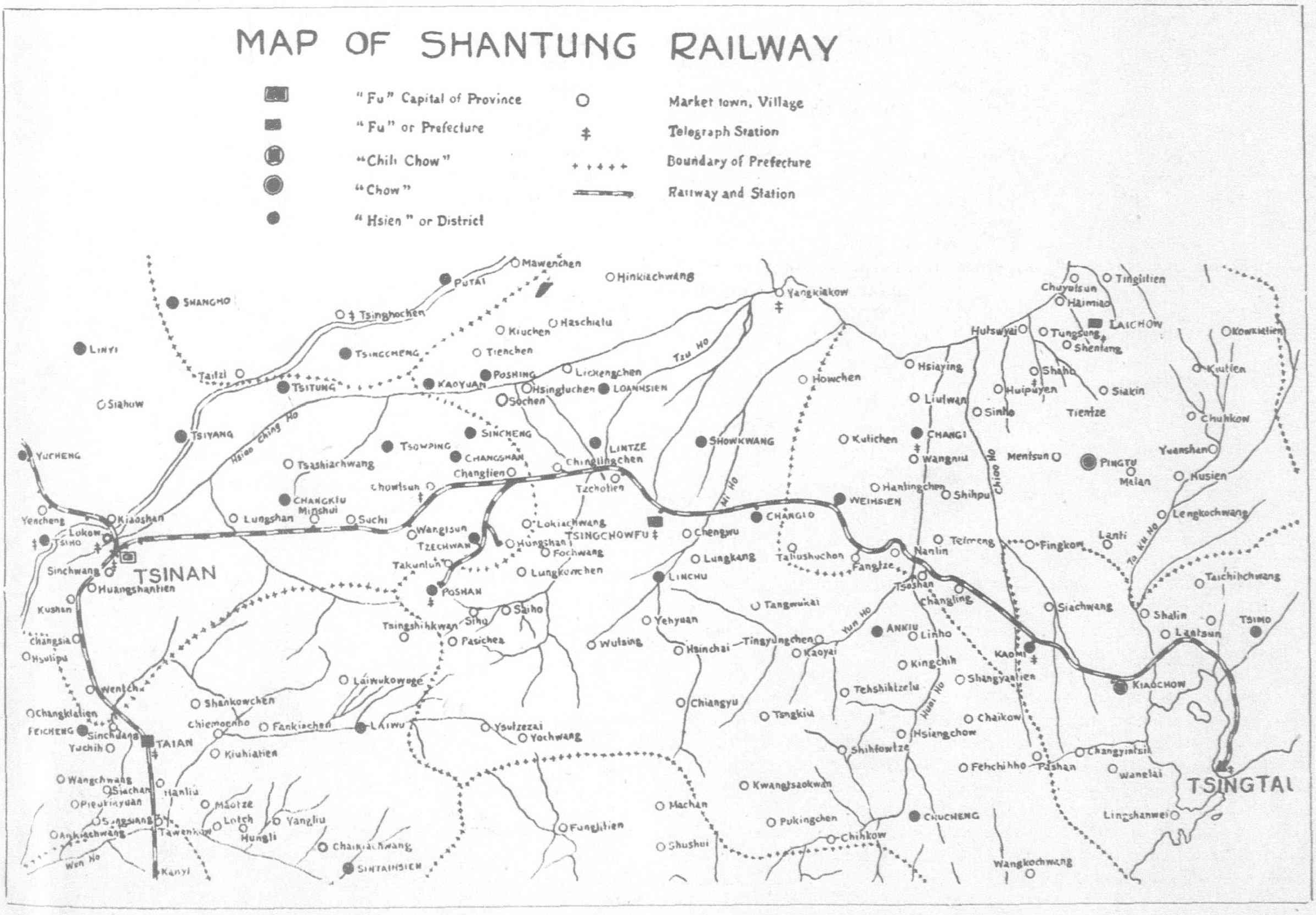
In the face of much danger the Japanese Consul contrived on several occasions to get into touch with the Chinese, and endeavored to bring about the suspension of hostilities. As, however, the Chinese troops continued firing, probably because the orders of General Chiang Kai-shek to the contrary were not obeyed, hostilities were not discontinued until the afternoon of the fifth.

(*d*) At that time, 4,000 Chinese troops still remained within the Walled City of Tsinan, while the number of those in the neighborhood ran into tens of thousands. They dug trenches round the Foreign Quarter. On the neighboring hills guns were in process of being placed in position, directed on Tsinan.

If hostilities had been permitted to be opened by the Chinese in such circumstances the Japanese troops and residents would have been placed in extreme jeopardy. It was, therefore, absolutely necessary for the Japanese troops charged with the protection of the Japanese residents to force the armed Chinese troops to leave Tsinan and the Shantung Railway without delay. On the 7th, at 4 p.m., the Chief Staff Officer of the Japanese troops demanded that the Chinese troops should withdraw to a limit of 20 Chinese miles (*i.e.* about 7 English miles) from Tsinan and from either side of the Shantung Railway. He also demanded the disarming of the Chinese troops who had committed outrages on the Japanese troops and residents, and the punishment of the responsible officers. A reply was to be given within 12 hours.

Not only did the Chinese fail to comply with the demand, but their troops assumed a even more threatening attitude. On the 8th, the Japanese troops set about clearing the locality. By the 9th they had driven the Chinese troops around Tsinan to points outside the approximate limit of 20 Chinese miles.

(*e*) On the other hand, the Chinese troops within the Walled City of Tsinan, including "un-uniformed soldiers," kept firing on the Japanese troops and on the Shantung Railway trains. On the afternoon of the 8th the Japanese troops endeavored to disarm them by pacific means, but they would not be persuaded.


MAP OF SHANTUNG RAILWAY

In consequence, early in the morning of the 9th, the Japanese troops bombarded the points d'appui of the Chinese troops, such as the offices, within the Walled City, of the Tuchun (Military Governor of the Province) and of the Taoyin (District Governor) and the Walls, and at the same time took all possible means to induce the Chinese troops to get away and escape. As a result, early in the morning of the 11th, the greater number of the Chinese troops changed into plain clothes and escaped from within the Walls. Thus, except for the "un-uniformed soldiers" in ambush, the Chinese troops were driven outside the 20 Chinese mile limit.

(*f*) According to particulars ascertained up to May 15, fourteen of the Japanese residents were killed by Chinese troops in the present disturbance. Most of their bodies (including those of women) bore marks of having been subjected to inconceivably brutal acts of the most revolting character. Fifteen others were wounded. Various men and women were subjected to indescribable insults before the public gaze. The number of the Japanese houses looted is 131.

(*g*) With regard to the story of the alleged murder of Mr. Tsai Kung-shih, "Shantung Commissioner for Foreign Affairs," and of the members of his staff, which is bruited abroad by the Chinese, it may be remarked that, on the outbreak of the disturbance on May 3, the Chinese troops and "un-uniformed soldiers" fired indiscriminately at the Japanese, whether soldiers or civilians, from within all and any buildings where they could find a foothold. In fact, their fire from the Commissioner's Office (which was not known to be such by the Japanese troops engaged in fighting in that quarter) killed two Japanese soldiers. In the evening of the same day, part of the Japanese troops went on patrol. Over a dozen Chinese, who were lurking inside the Commissioner's Office, suddenly opened fire on these Japanese soldiers, who could not but respond to the fire and overpower them. Whether these included Mr. Tsai is not known.

It need scarcely be stated, however, that the Japanese troops would never in any case kill a single non-resisting Chinese citizen. Still less need it be said that the allegation regarding the "cutting off of nose and ears" is simply impossible, from the very nature of the character and habits of the Japanese people.

6.—The following points call for special attention in a survey of the circumstances attending the Tsinan Incident:

(*a*) The unfortunate incident owes its origin to the fact that Southern soldiers looted the house of a Japanese resident, and that they fired on the Japanese soldiers who went to the rescue.

(*b*) Before the incident occurred, the responsible officers of the Southern Army repeatedly declared that they would assume the responsibility for the maintenance of peace and order, and demanded the removal of the Japanese defence works. The Japanese troops removed their defence works on the night which, it so happened, preceded the outbreak of the disturbance, and some of the Japanese residents, who had gone to places of safety, returned home.

(*c*) The incident occurred immediately after the Japanese defence works were removed. At the moment that happened the Chinese troops, in various places, simultaneously began to attack the Japanese troops and to outrage and plunder the Japanese residents. This outrage and plunder were almost entirely confined to the Japanese.

These circumstances produced the impression that the disturbance was designedly brought about by the Chinese, at least by the lower classes among them.

(*d*) In the face of much difficulty the Japanese repeatedly established contact with the Chinese and arranged for the suspension of hostilities. On each occasion, orders failed to be obeyed on the Chinese side, and hostilities had necessarily to be continued.

(*e*) As the Chinese troops, including "un-uniformed soldiers," fired indiscriminately under cover of any houses they could find, the Japanese troops had to engage in street fighting in the most difficult circumstances.

(*f*) The brutalities which the Chinese soldiers committed on some of the resident Japanese men and women immediately after the incident occurred are so cruel that description of them is impossible.

(*g*) It is alleged that the limit of twelve hours attached to the demand which was made by the Japanese Commander on the 7th gave the Southern Army scarcely any time for consideration. It must be noted, however, that at that moment the circumstances were so urgent that the Japanese Commander was convinced that, if there were any delay, sharp practice on the part of the Southern troops would find its opportunity and place not only the Japanese residents but the Japanese troops themselves in the most dangerous position. His precaution was but natural in view of the faithlessness hitherto manifested on the Chinese side.

The Economic Salvation of China

By Y. F. Tseng, M. Sc.

[The following article, by a Chinese, is of such timely interest and presents such an original point of view, that we feel that it will be of advantage to our readers to publish it.—Ed.]

IN the following, endeavor is made to trace the cause of present chaotic condition of this country and find out ways and means for fundamental solution of our various political, social and economical problems. It is hoped that the writer's endeavor will form a basis of series of discussion and research to discover a practical plan for salvation of our country.

It is the writer's belief that our salvation lies fundamentally on economic reconstruction which in turn can only be carried out by completion of communication system, enlightenment of the mass and doing away with the disloyal inclination of mental and manual workers, no matter what will happen to the revolution and the unequal treaties.

SECTION I.—A HISTORICAL RESEARCH.

This research covers a period of 2,335 years from the later part of the feudalism (Chan Kuo) to the end of Ching Dynasty. The reigns of the Ching, Han, Sui, Tang, Sung, Yuan, Ming and Ching Dynasties covering 1,385 years, could be considered as united and peaceful although during this period there were not without internal discord and rebellions. During the Chan Kuo, San Kuo, Liangtsin, Nan-pei Chao and Wutai the country was divided into several feudal states by feudal lords periodically warring against one another, though fighting during these periods were not so serious as were in the Dynastic changes. Such feudalistic state lasted 771 years. Internal wars in consequence of dynastic changes lasted a total of 179 years. Following is a table showing result of such a research:

TABLE SHOWING PERIODS OF CHAOS AND PEACE DURING THE 2,335 YEARS FROM CHANKUO TO THE CLOSE OF THE CHING DYNASTY.

Name of Dynasty	Unification (peaceful) No. of Years	Separation (half-chaotic) No. of Years	Chaotic No. of Years	Main cause	Remarks
Chankuo	—	204	—	Feudalistic lords	Internal fighting among feudal lords.
Chin	12	—	—	—	Peace maintained by military force.
Last days of Chin	—	—	7	Common-people	At first rampancy of bandits, later fighting between Chu and Han
Eastern and Western Han	385	—	—	—	Chihmei (.. ..) and Wang Mang conspiracies
Last day of Han	—	—	36	Common-people and usurper	The Huangchin rebellion and the Tung Cho conspiracy.
San Kuo or Three Kingdoms	—	45	—	Usurper	—
Tsin	—	155	—	—	Though nominally unified but unification lasted not long, marked by distraction

Name of Dynasty	Unification (peaceful) No. of Years	Separation (half-chaotic) No. of Years	Chaotic No. of Years	Main Cause	Remarks
Han-pei Chao	—	169	—	Usurper and foreign invasion	—
Sui	26	—	—	—	—
Last days of Sui	—	—	8	Common-people	—
Tang	251	—	—	—	Disturbances caused by powerful military commanders
Last days of Tang	—	—	33	—	The Huangchao Rebellion
Wutai	—	53	—	Usurper	—
Last days of Wutai and beginning of Sung	—	—	15	Eunochs	—
Sung	152	—	—	—	—
South Sung	—	145	—	Foreign invasion	—
Last days of South Sung	—	—	8	—	Invasion by Mongols
Yuan	58	—	—	—	—
Last days of Yuan	—	—	32	Racial revolution	—
Ming	252	—	—	—	The Prince Yen and the Prince Ning Rebellion
Last days of Ming and beginning of Ching	—	—	40	Common-people	—
Ching	249	—	—	—	Rebellion of the 3 feudatory chiefs. The Tai-ping Rebellion. Foreign invasion by the allied army, etc.
Total No. of years	1,385	771	179	—	—
Percentage	59.32%	33.02%	7.66%	—	—
Average each time	173	128	22	—	—

The above historical research of 2,335 years may again be summarized as following :—

1. In percentage, the periods of unification, separation, and disturbance are 59 per cent., 33 per cent., and 8 per cent. respectively.
2. The longest period of unification is during the Eastern and Western Han Dynasty covering 385 years and the shortest period during the Chin Dynasty covering 12 years. The average is 173 years.
3. The longest period of separation is during the Chan Kuo covering 204 years and the shortest period is during the Three Kingdoms or San Kuo covering 45 years. The average is 128 years.
4. The longest disturbance of Dynastic changes is during the period between the close of the Ming Dynasty and the beginning of the Ching Dynasty lasting 40 years. The shortest disturbance is during the war between Chu and Han at the end of the Chin Dynasty lasting seven years. The average is 22 years.
5. The time of separation is more than that of unification prior to the Yuan Dynasty. While the reverse is true after Yuan as during the 630 years from Yuan to the close of the Ching Dynasty, with the exception of 70 years of Dynastic wars, the country was unified and peaceful. In other words, feudalistic thought disappeared gradually.
6. Except the dynastic changes during the Liu Chao, Wuait and Southern Sung, which were caused by usurpers and foreign invasion, almost all the revolutions were originated by common people, who were invariably led by some superstitious propaganda.
7. All the revolutions and unification were usually carried out with intensive fighting and killing, as otherwise, without shedding of blood, the economic problem could not be solved.
8. The Chinese people should not be blamed for the periodical dissensions and disturbances, as with such a big population which almost equals all white races put together, there is no parallel in history where human beings be unified and ruled in one nation for so long a time.

That the alternate periods of peace and disturbance of our history and that each period of disturbance should have lasted so long may be attributed to the following reasons :

(*a*) As large as our territory and population are, it would be well nigh impossible to attempt to maintain the country in unification in the absence of good communication and efficient system of Government.

(*b*) Most of the revolutions are the direct outcome of the failure of production to meet the demand. When the ruling family was in prosperity, production was always enough to meet demand and therefore peace prevailed. After a lapse of some time, the population increased and production gradually fell short of the demand and hence the unscrupulous by using superstitious catchwords aroused the people to rebellion. Many people, striken by poverty and led by superstition, crowded to the standard of such adventurers and a state of chaos was the sequel.

Again from the research, the future of the Republic may be safely predicted :

1. Feudalistic tendencies are no longer in line with the present nationalistic notions and are bound to become extinct.
2. It is sure that the Republic will be united again.
3. To aim at permanent unification there must be a thorough economical, governmental and educational reconstruction in order to usher in a period of eternal peace.

SECTION II.—A STUDY OF THE CAUSES OF THE CHAOS OF THE REPUBLIC AND THE SALVATION OF THE COUNTRY

Basing on historical facts, the disturbances to-day may be attributed to the following factors, namely no organization of the government, people's ignorance, difficult communication and poor productivity. Therefore, in the past, for any economic readjustment, force was invariably resorted to. Since the inauguration of the Republic there has not been a year without some disturbance. The disturbances bear a strong analogy to those attending the past dynastic changes. The number of our population is yet on the increase. In international trade our export falls short of imports. Our national wealth is flowing out with alarming rapidity. *The power of productivity is at the same time decreasing daily on account of the civil wars. The brilliant and capable men, finding no employment, turn to be adventurers and politicians to stir up trouble for their personal ends. The strong, finding no work, turn to be soldiers and robbers and use their arms to acquire the means of their subsistence. Thus, things went on and every one turns to non-productive occupations and thus the power of productivity further deminishes. Now that the country is already both weak and poor, but through extortion and restless taxation by the military the wealth of the nation is centred on the privileged few and more unevenly distributed. This in turn demoralizes the people. At this junture, the Communists appear, advocating massacre and looting. Is it then strange that the people of the middle and lower classes should flock to their standard ? If the present condition prevails. I should not be surprised that there should be a recurrence of the massacres of Li Chuang and Chang Hsien Chung.

If we are to profit by the lessons taught by history and if we desire permanent peace. We should not rely merely on military force but should within the shortest possible space of time endeavor to start what might be called economic reconstruction which appears to be the only salvation no matter what will be the outcome of present revolution and unequal treaties. In the following chapters it is attempted to show the ways and means for carrying out such a work.

SECTION III.—DEVELOPMENT OF COMMUNICATION

The progress of civilization centers on the economic condition of the society. This is well explained by our old proverb that "sense of shame and righteousness can only be cultivated when a man is adequately clothed and fed." Economic improvement in turn depends upon the increase of the power of production. The essential factors for increasing the power of production are the invention of labor-saving machinery, the intellectual and physical progress of workers, the perfection of the financial institutions and the increasing efficiency on organization of production. All these are again effected by the state of communications. When communication is convenient and cheap, the necessary factors to increase production will naturally develop. With convenient and cheap communication the natural resources can be exploited and then industry will flourish, and national wealth will consequently be enhanced. The invention of machinery, prevention of warfare and advancement of morality of the community will take step of the material progress caused by good communication. In the following table, let us make comparison of the national wealths of various nations in the world in respect with the state of communication.

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*This mercantilistic idea is similar to Dr. Sun's in his "Three People's Principles" and is not based upon sound economics.—Ed.

Name of Country	Area (in 1,000 sq. km.)	Population (1927) (in 1000)	Length of railways in km.	Length of ry. per 100 sq. km.	Length of ry. per 10,000 men	Tonnage of steamer (1926)	National wealth (1921) in Million	Average national wealth per capita	Remarks
U.S.A.	7,839.1	105,711	419,304	5.4	39.7	14,879	643,531	5,891	Excluding dependencies
Great Britain	244.0	44,314	39,261	16.1	8.9	19,400	178,213	3,751	do.
France	551.0	39,596	53,560	9.70	13.7	3,491	125,826	3,451	do.
Japan	379.9	59,737	16,108	4.2	2.7	3,968	86,077	1,538	do.
Germany	472.0	63,309	57,653	12.3	9.2	3,111	71,614	1,154	do.
China	7,055.8	485,508	15,260	0.2	0.3	410	38,269	78	Excluding Mongolia and Tibet.

We may conclude from the above comparison that the wealth and prosperity of a nation do not depend merely on the size of population and its natural resources but more on the state of communication. Those countries which possess long mileage of railways and large tonnage of steamers are rich and prosperous, otherwise they are weak and poor. The prosperous nation will achieve progress in civilization and those which are weak and poor gradually degenerate.

Let us take United States of America, as an instance. So far as communication is concerned, such as railways, motor roads, canals and telegraphs, no country in the world is her equal. In the United States of America there is a motor-car among every 4 persons.* There is not a spot in the country without a motor road. As a result of cheap and convenient transportation all necessary requisites for enhancing productive power are fully developed in the United States and here to-day the condition is approaching to such a state that everybody can find the work of which he is capable and everybody can get the thing of which he is in need. This unusual prosperity of the United States all comes from her communication system. According to the recent statistic the national wealth per capita in the United States now reaches $7,000. When one is well-off, there will be no difficulty to preach morality. This material as well as spiritual progress will certainly advance the prosperity of a nation. The size of our territory excluding Mongolia and Tibet is the same as that of the United States but our population is 4 to 5 times larger; if we follow her example in developing the means of communication, not only would peace be secured throughout the country but the whole humanity will be blessed as a result of increasing such a tremendous productive power.

There are so many details concerning the improvement of communication that if we start with elaborate plans and expect too much, nothing could be accomplished. The most practical means of developing our communication lies first on the modest scheme to link up China Proper with Manchuria, Kokonor and Chinese Turkestan with well planned railway system. We should let every province have at least one railway passing through. All the lines must be linked up one another to form systems and each system must have an outlet to the sea. Under our present state of finance if no more railroads than those mentioned above could be built, motor roads and canals in each province may be constructed as feeders to the railroads passing through.

After this preliminary plan being accomplished, our natural resources will certainly be given impetus to develop and prosperity in commerce and industry will naturally follow to say nothing about the advantage to be gained from political and military movements.

Upon the principle as outlined above, the following railways are proposed to be constructed immediately:

From	*to*	*Mileage*
Paotou ..	.. Lanchow (Kansu)	500
Lanchow	.. Loyang	480
Tatung (Shansi)	Chengtu	850
Pukow ..	.. Hsinyang	290
Chengtu..	.. Hankow	750
Shansi ..	.. Hsingyi (Kueichow)	760
Hsingyi	.. Lienchow (Kuangtung) ..	360
Hsingyi	.. Yunnan	160
Kuangchow†	.. Hankow	240
Naning	.. Hengchow	400
Nanchang	.. Chuchow	140
Nanchang	.. Foochow	280
Peking ..	.. Chihfeng (Jehol)	220
Chihfeng ..	Chinchow (Fengtien).. ..	170
	Total	5,600 miles

Most of the above lines have been surveyed and contracts for their construction been entered into. The cost of construction is estimated at $1,000,000,000. The construction of 5,600 miles of railway may be undertaken in two periods along with the disbandment of troops within a space of 10 years. There are two ways to raise the necessary funds:

1. To enter into negotiation with the countries which have agreed to remission of the balance of the Boxer Indemnity amounting to $24,000,000 per year. This sum may be used as sinking fund for floating a loan for construction of the above-mentioned railways. A Directorate of Railways Construction with Chinese Director-General may be established by the Central Government to attend affairs appertaining to construction work. The Director-General may appoint nationals of the countries from which the loan is contracted as Chief Engineers and Chief Accountants to undertake the construction of the railways. A council board of experts to consist of nationals of the countries which have remitted the Boxer Indemnity is to be instituted for deliberation on questions relating to the construction of the railways during the period of construction.

   After the completion of the construction, portion of the profit derived from the operation of the railways may be devoted to use for various purposes as designed in the present remission scheme by the countries concerned. Basing on the profits derived from operation of the railways at present, the annual profit to be derived after the completion of aforementioned lines will amount to $67,000,000 per year.

2. If the Salt Administration is again thoroughly reorganized, the annual collection should reach $140,000,000. After deducting administrative expenses amounting to $10,000,000, interest on and amortization of the capital of all Foreign Loans charged on the Salt Revenue amounting to $20,000,000 and the administrative expenses of the Central Government amounting to $70,000,000, the remaining $40,000,000 per year may be used as sinking fund for the floatation of a railway loan..

The construction of the above-mentioned railroads is by no means sufficient for a country as large as China. It is only intended as preliminary step on the constructive work. Only by so doing that, economic condition of the country can be stabilized. As soon as communication is made easy, the buying and selling power will increase, so will be the internal trade. To utilize the remitted Boxer Indemnity in this way is to do a thing that is beneficial to all parties concerned. The project will most probably meet with no opposition from the friendly powers.

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*This is probably incorrect. One car to 7 persons is probably right.—[Ed.]

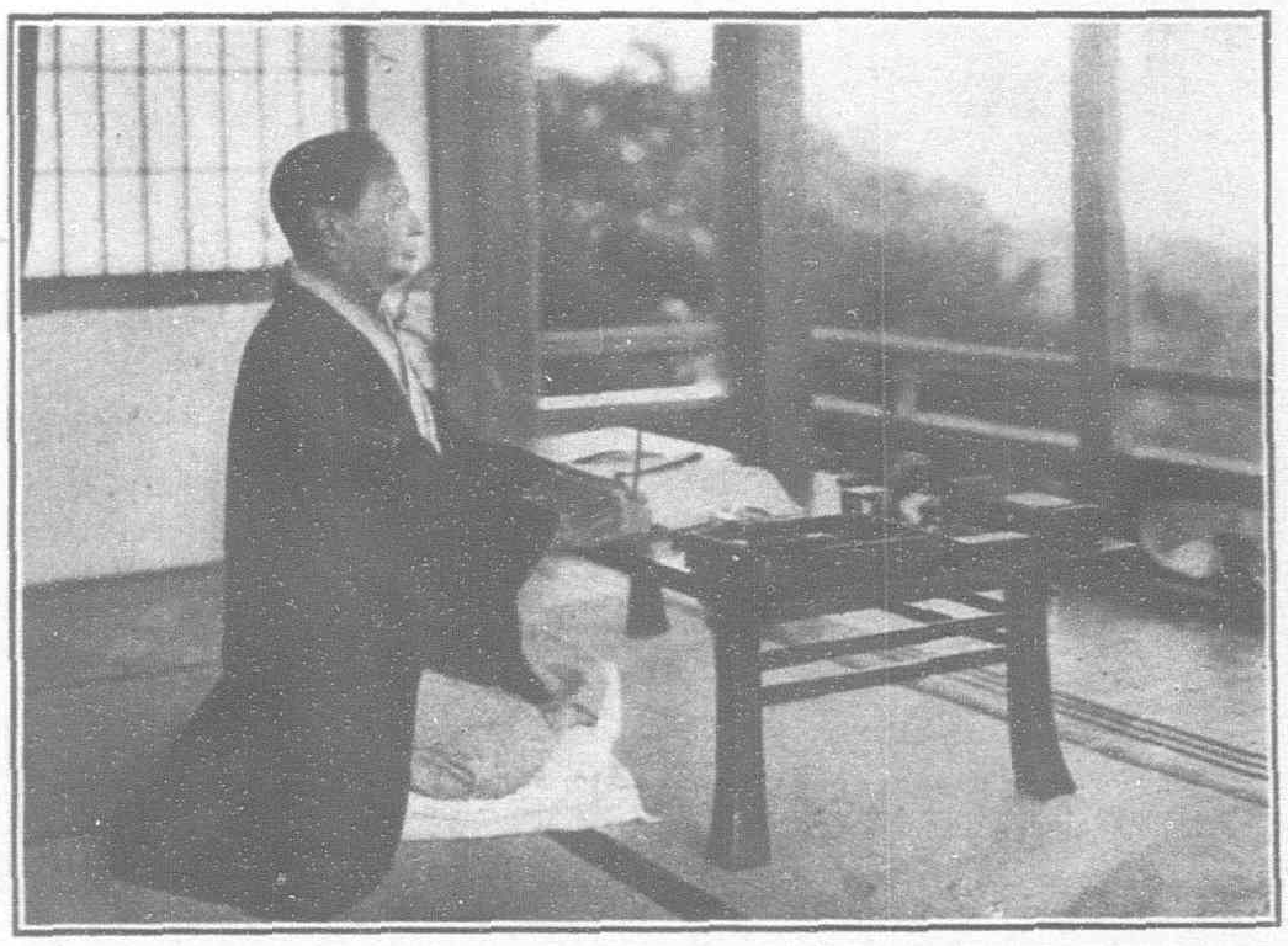
†Canton.

Baron Kihachiro Okura

The death of Baron Kihachiro Okura took place at his residence at Mukojima, Tokyo, on April 22, in his ninety-second year. The following article was written by Mr. George Bonson Rea in February, 1925, and gives an excellent presentation of the personality of one of Japan's greatest men. It is interesting to note that Baron Okura spent his ninetieth year in inspecting some rice plantations which he had started in Mongolia and then he climbed Mount Fuji (12,365-ft.).

WITHOUT detracting from the important part played by the present and past liberal cabinets in bringing about such a remarkable improvement in the relations between Japan and China it is to the heads of big business in Japan that credit is mainly due for the impulse which compelled such a radical modification of the old military program. The Iwasakis, the Mitsuis, the Sumitomos, the Matsukatas, the Kuharas, the banking interests headed by Baron Shibusawa and Junnosuke Inouye, the chiefs of the great textile industry and others prominent in the commercial life of the empire were the driving force behind the movement which restored to Japan the full confidence and trust of the other powers. In this group stands the venerable founder of the house of Okura, an ardent advocate of Sino-Japanese friendship and co-operation, who after a lifetime of activity is now retiring to give his last years to the advancement of his pet hobby.

In October last, this pioneer of Japan's foreign trade, celebrated simultaneously his eighty-eighth birthday, his golden wedding and his retirement from business. After seventy years of business activity he finally decided it was time to hand over direction of his many enterprises to his son and devote his remaining years to the promotion of peace and cordial relations between his own country and the nation to which it owes so much of its culture and civilization. To celebrate the occasion fittingly and reciprocate in part the tokens of esteem received from his many Chinese admirers, this exceedingly rich man determined to spend a million and a half yen in a series of banquets and fêtes that would convey his last greetings to old friends and business associates whose good-will and good-fellowship had contributed so largely to his success in life.



Baron Kihachiro Okura

In China, in America, in Europe, in other parts of Asia and in his own country, his personal friends, business associates, co-directors, shareholders and employees in his many enterprises were numbered by the thousand. The recipients of his benefactions were legion. That such a man should celebrate his retirement from active life by some testimonial of regard for this host of loyal friends and adherents may seem theatrical to the Occidental, but the sentiment behind it is so unusual and inspiring, so worthy of emulation by multi-millionaires in other countries as to command more than a passing notice. Whoever heard of an American or European financial magnate celebrating his retirement from business by a series of splendid entertainments to those who had contributed to make his life a success?

Had this old man been a miser, a slave-driver of his men or devoid of public spirit, we could better understand the protests made by the Tokyo radicals against the expenditure of this large sum for such purposes. But Baron Kihachiro Okura, a name entwined with the development of modern business and industry in Japan and China, has given freely and spontaneously of his riches for philanthropic purposes.

On the bluff at Akasaka overlooking the city of Tokyo stands one of the finest museums in the world housing the rarest and most precious specimens of the art of Japan, of China, of Korea and of India, a veritable treasure-house of the best works of ancient and modern Asiatic masters. The collection includes carvings, pictures and porcelains of marked antiquity, amongst which is a group of Buddhas considered as one of the national treasures of Japan. This is the famous Okura Fine Arts Museum, in the perfection of which its founder not only lavished his wealth but found that same relaxation from business cares and stimulant to his energies as did J. P. Morgan in his search for the beautiful in the art galleries of Europe.

In 1898, he established at a cost of a half million yen the Okura higher commercial school, in Tokyo, from which many students have graduated and made their mark in the business and industrial world of Japan. Another million was donated in 1907 to establish similar institutions in Osaka and in Seoul. He has contributed freely to succor the sufferers from flood and famine in Japan and China and last year donated a million yen to the emperor's relief fund for the earthquake victims.

The attitude of the house of Okura towards labor is best expressed by Mr. C Kadono, vice-president and active head of the Okura interests, in an interview recently published in *The Japan Advertiser*. At a time when it is generally admitted that Japanese laborers and skilled workmen are paid entirely out of proportion to their efficiency and earning power and a general tendency to economize by reducing wages is seen on all sides, the active head of the vast Okura interests takes the saner and broader stand that labor should be encouraged to greater efficiency and increassd production by shorter hours and better wages.

The proper relation between capital and labor constitutes the most vial problem confronting the captains of industry in America and Europe and has been partially solved by increasing the efficiency of labor through a betterment of its economic and social status. The same problems will have to be faced as Japan becomes more highly industrialized, and their solution will also depend largely upon the measures taken by capitalists to better the general condition of her working classes. Mr. Kadono sounds the right note. The road to real prosperity and world recognition of Japan's right to equality lies in this direction.

The life of Kihachiro Okura is a romance of money-making as interesting and as worthy of high commendation as those of many better known American and European millionaires. Born in 1836 in Echigo, he came to Tokyo at the age of eighteen to seek his fortune, starting at the bottom of the ladder as an employee in a drug store. Five years later, he opened business on his own account. The wars of the restoration gave to Baron Okura his real start on the road to fortune through the importation and sale of arms to the clansmen, his business bringing him into intimate relations with the statesmen of the early Meiji period and earning for him a commanding position in the commercial world. In 1872, when Prince Ito made the first tour of foreign countries in order to investigate foreign methods and apply them to Japan, Kihachiro Okura, formed part of his large suite, the first Japanese business-man to make the tour of the world. On his return in 1874 he organized the Okura-gumi, the pioneer foreign trading company in Japan, its branch office opened in London during the same year being the first branch of a Japanese concern in a foreign country. Form this beginning the activities of the Okura-gumi have expanded until now they cover nearly every line of commerce and industry with offices in all the principal cities of Japan and branches throughout China as well as in Vladivostok, Sydney, San Francisco and New York.

The civil war of 1894, the Sino-Japanese and the greater Russo-Japanese conflict found the Okura-gumi fully equipped and organized to act as the leading government contractors for the supply of arms, munitions and supplies to the military forces. The provisioning of Japan's army and navy had since constituted one of the most interesting branches of the widespread Okura activities, leading the firm to engage heavily in the China and Mongolia cattle trade and to acquire cold storage plants in Tsingtao, Tientsin and Manchuria. In the struggle for existence which confronts Japan, the need for beef, mutton and other meat foods is increasing rapidly from year to year and the one dependable source of near-by supply lies in Chinese territory, in the province of Shantung and the plains of Mongolia. The foundation laid by the Okura-gumi as army contractors has given the firm an exceptional advantage to utilize its organization for this purpose.

Outside of the companies which bear his name, the Okura holdings are so wide and varied that it would be difficult to enumerate them all. Sufficient to say that Baron Okura is deeply interested in the Bank of Taiwan, the Hokkaido Colonial Bank, the South Manchuria Railway, the Tokai Paper Mill, Otaru Timber Co., Japan Leather Company, Japan Chemical Industrial Co., Imperial Hotel, Imperial Theatre, Imperial Flax Co., Tokyo Rope Mfg. Co., Japan Shoe Mfg. Co., Japan Beer Brewery Co., Japan Sugar Co., Tokyo Electric Light Co., Industrial Bank of Japan, Ujigawa Hydro-Electric Co., Niitaka Sugar Refining Co., Railway Car Mfg. Co., Tokaichi Development Co., Imperial Refrigerator Co., Tokyo Wool Factory, Akita Timber Co., and many others.

In China he has built up the Penchihu Coal & Iron Mining Co., and is one of the largest shareholders in the Han Yeh Ping Iron and Steel Corporation. The engineering world, however, will always associate the name of Okura with the introduction of modern machinery and industrial methods into Japan. This branch of the Okura business was established in 1891 and in addition to acting as the agents and representatives of many of the best foreign manufacturers of machinery, the engineering department entered into the general contracting field undertaking all branches of public works, buildings, bridges, railway and harbor construction and reclammation work.

Early in life Baron Okura recognized the vital importance to Japan of the closest political and commercial relations with China and many of his years and a great part of his fortune has been spent in developing this intimate contact through the investment of Japanese money in Chinese concessions and in the establishment of joint industrial undertakings. He has always played fair with his Chinese associates and as a consequence enjoys their respect and confidence to a degree greater perhaps than any Occidertal or other Japanese. A large part of his energy has been expended in developing the various resources of Manchuria and Mongolia.

Although these investments have not always proved profitable and the successful operation of various enterprises has been hampered by Chinese ignorance, hostility and official interference, Baron Okura remains firm in his belief that it is in this region that Sino-Japanese businese co-operation will bring the greatest and most lasting benefits to both countries. The prosperity that has come to Manchuria, filling the pockets and swelling the bank accounts of Chinese of all classes, is due primarily to the operation of the South Manchuria Railway but the many independent Japanese enterprises in that region have also played a large part in creating these riches. Foremost amongst the latter has been the firm directed by the optimistic Baron whose faith in the country has brought many millions into it on which the Chinese alone have so far drawn down dividends.

His Chinese friends with their profound veneration for age and characteristic lavishness in making presents to those they respect, deluged the Baron with such costly gifts on the occasion of his recent birthday that many had to be returned to their senders because of the prohibitive luxury tax now in force in Japan. It was largely to reciprocate this expression of good-fellowship and entertain his Chinese friends in a proper manner that he planned the gala fêtes that met with such opposition from the Radicals of his own country.

The incident, however, closed happily with a series of receptions held at the Imperial Theater in Tokyo (in which Baron Okura is the chief shareholder) in honor of the occasion. Thousands gathered to pay their respects to this last of those leaders of Old Japan who had the foresight and courage to pry their country out of the rut of ages and elevate her through industry and commerce to her present proud position amongst the nations. The premier and members of his cabinet, officials of all grades and ranks in the service of the Mikado, bankers, manufacturers and merchants, whose names are famous in international trade and finance, members of the diplomatic corps, foreign and Chinese business men, noted educationalists, men of science and letters, and friends in many other walks of life gathered to honor him. The most noted actors of the Japanese stage and the famous Mei Lang-fang entertained them. It took five days to hold the reception, a remarkable tribute to the esteem in which he is held not only in Japan but in other countries.

His business career ended, he now bravely announces his determination to pass the remaining years of his life in promoting friendship and closer relations between Japan and China. He very wisely delares that if permanent friendship is to exist between the two countries it must be based on economic co-operation and to place these ideas into practice he says that notwithstanding his advanced age he will make a vist to Mongolia this spring to arrange the details of a new undertaking.

Bricks That Come Back

By George Bronson Rea

AT a time when the United States is under fire for its "imperialism" in Latin America, it is rather difficult to arouse public opinion in this country over Japan's activities in China. The very day the Senate voted to uphold the President's use of armed force in Nicaragua, the Central Executive Committee of the Kuomintang, send a cablegram from Nanking addressed to the American People, Press and Congress in care of Senator Borah and Congressman Porter, denouncing the dispatch of Japanese troops to Tsinanfu as "unwarranted and devil-intentioned; a violation of the established principles of international law." A year or so ago, such a telegram would have received publicity in all the newspapers, but the old Chinese publicity trick has worked itself out. It has been abused too often. One Washington newspaper gave it scant notice; the rest declined to handle it.

Americans now understand that Japanese troops are in Shantung for the same reason that American forces are in Nicaragua. In neither case are they intended for conquest or dominion, but to protect American and Japanese lives and property menaced by civil warfare. Experience tells both governments that an ounce of prevention is worth a pound of cure. Their first obligation is the protection of their own interests.

We recommend our Chinese friends to read some of the many new books on Latin American problems. They will then realize that the American Government has all it can do at this time to justify its own policies without contributing to the gayety of nations by denouncing Japan for following its example in protecting the lives and property of its citizens in foreign countries. The situation confronting the United States in Latin America is identical with that which Japan faces in China, with this difference. Whereas, the critics of American policy are European and Latin Americans, the critics of Japan are confined to a small group of American writers whose virulent attacks upon European and Japanese policies in Asia have opened a game at which two can play. Measure for measure we are now being paid in our own coin.

As Professor Rippy says in his recent book, "Latin America in World Politics;" "this suspicion and antipathy is not wholly due to the aggressiveness which has characterized the energetic people of the United States. Not our acts alone, but the interpretation of these acts by Frenchmen, Spaniards, Germans, and at times also by Englishmen, together with the traditional attitude of suspicion south of the Rio Grande, have been responsible for the apprehensions and hostility of the people of Latin America. In order to understand the anti-Yankee sentiment which has been so prevalent in the South it will be necessary to keep in mind racial and religious diversities and insurgent nationalism, as well as a certain exclusiveness and intolerance inherited from the Spanish regime. It will also be necessary to recall the hostile criticisms of the French and the Spanish—the intellectual leaders of Hispanic America—the propaganda of the Germans and the severe comments which have sometimes come from the British press.

"For Latin America's attitude toward us, then we are not entirely to blame, but it cannot be said that our course has been faultless. We have been aggressive and sometimes haughty. It is in vain that we plead our innocence of imperialism. Our whole history gives the lie to such a plea, unless one wishes to quibble over the meaning of the term 'imperialism!' The fact is that our boundaries are vastly more extensive than they were in 1783 and that most of our territory has been acquired at the expense of Spanish America. Nor can the fact that our control has been extending rapidly into the Caribbean successfully be controverted. A policy which has brought under our virtual domination some nine to twelve republics in a generation may differ from European imperialism in form but is very near that imperialism in substance. We may enter the plea of benevolence, but neither Europeans nor Latin Americans are inclined to accept it. Our policy is benevolent in no eye but our own, and perhaps we are not the best judges of its nature."

It is only in the last two or three years that the looking glass has been held up to the American people. The reflection is not a pleasant one. We are beginning to understand better the force of foreign propaganda directed against us in Latin America and before we are through with it, we will be in a worse position than Japan ever was in over China.

Other nations are resenting our superior attitude. Our foreign policy is being analyzed, picked to pieces and shot full of holes. It is shown that we have three distinct outlooks on world affairs. We refuse to co-operate officially with Europe for the solution of European problems; we reject the right of Europe to interfere in or co-operate with us in Latin America, while in the Far East we insist with the full force of our diplomacy upon co-operating with Europe in matters connected with China up to the point where force is necessary; then we withdraw from the concert and play a lone hand. As John Hay once wrote at the height of the Boxer Indemnity negotiations; "Give and Take"—"the axiom of diplomacy to the rest of the world, is positively forbidden to us by both the Senate and public opinion. We must take all we can and give nothing." Or, as Professor Latané puts it in his new History of American Foreign Policy; "we demand all that is due us and refuse to assume any obligation or give anything in return."

We cannot have our cake and eat it too. We cannot stand for a closed door in the West and persistently champion an open door in the East without creating enmities. Rippy suggests that the solution of our own problem in Latin America is to gradually relax our pressure in the Far East, otherwise our policies will in time create a world wide hostility. Americans in China may temporarily benefit by appealing to Chinese sentiment from an anti-Japanese or anti-European platform, but the little we gain through such activities is more than offset by what we lose through the chorus hammered merrily on a thousand anvils from the Rio Grande to the Straits of Magellan. The cargoes of bricks we have unloaded upon Japan and Europe are being shipped back to us *via* South America.

Who Will be the Loser?

China's Suicidal Boycott

By M. Taba

OUR beloved sons and daughters of Young China, under the stimulus of the recent Tsinan tragedies, seem to have again lost their safety valve and prove to type, bursting out hot vapor in the form of the same old game of the anti-Japanese boycott which is their favorite and categorical manoeuvre.

Economically speaking, this form of an economic weapon proves to be a double-edged sword which cuts both parties contending, Japan and China, in view of an economic displacement during the boycott when the Chinese merchants closely connected with the Japanese traders are thrown on the horns of dilemma to wag the tail at one end and snarl at the other. They wag their tail simply because they want to buy Japanese goods and sell Chinese products to the Japanese; they snarl at the other, because they have to camouflage as if to dance to the jazz pipe of the habitual agitators. Isn't this a bit of tragedy?

Now apart, for the time being, from the political significance of the dispatch of the Japanese troops to Shantung and the subsequent aftermath of the Tsinan incidents, we want to review exclusively from an economic viewpoint the general aspects of the anti-Japanese boycott movement which is now threatening to cloud the political and business atmosphere all over the Continent so far as the Japanese and Chinese are concerned.

There is, unfortunately, a general misunderstanding, not only among the blind multitude, but even among the apparently enlightened Nationalists, that the anti-Japanese boycott is the sharp sword which can at any time bring the Japanese to their knees, should the Chinese carry out the boycott manoeuvre against the Japanese. This erroneous assumption is entirely based on the ignorant bliss of the Chinese who are miscalculating that Japan is an economic parasite to China inasmuch as Japanese industries depend to the greater extent upon China for raw materials as well as food supplies, and that Japanese industries would be completely destroyed, eventually causing the Japanese to be unable to keep their pots boiling, should the anti-Japanese boycott be enforced in the united front. Yet again, the Chinese are grossly mistaken in believing that the Japanese are accustomed to harp enthusiastically on the same string of the "Sino-Japanese co-existence and co-prosperity" because of the latter's unbalanced situation in the over-population and the dearth of material supplies, and that the national existence of Japan would be greatly imperilled, if the Chinese are unanimously aligned throughout the entire land to carry out, slow but sure, the anti-Japanese boycott. They further misunderstand in believing that, if resorted to protectionism and chauvinism in order to protect their home products, the Japanese "inferior goods" imported into the country can easily be replaced by their home-made commodities which are at present greatly produced and consumed by the natives. This misguided subconsciousness, combined with newly invented Nationalism or a second-hand "fiction" promoted by the modernized parrot-like patriots, leads to the suicidal boycott movement.

True, Japan desires to exchange her products with those of China in concert, and practically, to a certain extent, the former is depending on the latter for her requirements, attaching a greater significance to the principle of "give and take," in view of the predestination of the historical and geographical relations of both countries, but it is a pity that the present-day China, due to the political chaos, is not well developed and capacitated for supplies and demands of Japan, as she should be some day. China is blessed with rich resources in the vast area of land, but her resources are still buried dead as of olden days in the deep bosom of the Mother Earth; she is densely populated, but the greater mass is short of purchasing power, hardly attaining the "bread line."

Thus viewed, under present economic circumstances of China, Japan's loss, even in the face of the anti-Japanese boycott, will be only sporadic and limited to a certain dealers in particular commodities, and we can safely say that the boycott on the grandest scale can hardly imperil the basis of economic existence of Japan, while, on the contrary, we fear the greater boomerang blow to the Chinese life thereby.

With regard to the position of the China trade of Japan, it ranks the third place in Japan's foreign trade, while the Japan trade of China occupies the first place in China's foreign trade. This fluently shows that Japan is not so much concerned with the China trade as China is concerned with the Japan trade.

To illustrate our standpoint, we have to refer our readers to the following statistical analysis :—

Japan's Foreign Trade during 1926 :
(Unit in Y.1,000)

U.S.A. (Incl. Hawaii, Philippine Is.) :—	
Exports to	895,401
Imports from	699,039
	1,594,440
England (Incl. Hongk'g, British India and other overseas Possessions and Dominions) :—	
Exports to	399,964
Imports from	796,639
	1,196,603
China (Inc. Kwantung Province) :—	
Exports to	521,467
Imports from	396,443
	917,910

China's Foreign Trade during 1926 :—
(Unit in Hk. Tls. 1,000)

Japan (Inc. Chosen and Taiwan) :—	
Exports to	258,117
Imports from	349,461
	607,578
England (Incl. Hongk'g, British India and other overseas Possessions and Dominions) :—	
Exports to	198,564
Imports from	360,045
	558,609
U.S.A. (Incl. Hawaii and Philippine Is.) :—	
Exports to	156,776
Imports from	193,134
	349,910

Now turning from the above to the Sino-Japanese trade relations, we want to get a bird's-eye view of the staple goods and their trade figures quoted during 1926.

Japan's Imports from China :
(Unit in Hk. Tls. 1,000)

Bean Cakes	50,852
Raw Cotton	26,560
Coal	15,859
Yellow Beans	13,303
Raw Silk	7,637
Rape Seeds	7,317
Fresh Eggs in Shell	4,842
Pig Iron	4,095
Cowhide	3,304

Japan's Exports to China :
(Unit in Hk. Tls. 1,000)

Cotton Piece Goods .. .. .. (Incl. Yarn and Raw Cotton)	161,449
Sugar	21,855
Sea Products	15,588
Metals	9,220
Paper	8,841
Machines	8,841
Hemp and Jute Goods	7,333
Chemicals	6,253
Timber	3,340
Miscellaneous (Incl. Coal)	77,257

During 1926, Japan's China trade accounted for 25 per cent. for exports and 17 per cent. for imports, recording in average only 21 per cent. as compared with her 100 per cent. foreign trade, while China's Japan trade accounted for 30.2 per cent. in average in her foreign trade.

Japan's China trade returns, (including Kwantung Province), during these five years are as follows :—

(Unit : Y.1,000)

	1922	1923	1924	1925	1926
Exports to ..	405,378	340,061	420,999	570,085	521,467
Imports from	316,915	353,484	413,287	391,253	396,443
Total ..	722,293	693,545	834,286	961,338	917,910

Meanwhile, we cannot overlook in the above analysis the cheerful tendency of gradual increase of the trade balance which increased from Y.722,293,000 in 1922 to Y.917,910,000 in 1926, in spite of the boycott of the Chinese annual programme.

Coming back to our main point, we want to investigate whether or not Japanese industries be practically imperilled by the anti-Japanese boycott upheaval. According to our researches, however, we arrived at the conclusion that Japanese industries will not be so heavily curtailed by the boycott as the average Chinese fancy. For instance, in the aspects of Japan's imports from China, bean cakes which are annually heavily needed by Japan for agricultural purposes, ranking first in the import trade returns, can be pretty well spared, inasmuch as the commodity is gradually replaced by the ammonia sulphate which is easily available by Japan, while on the part of China, producers of the commodity will find it difficult to secure alternative markets abroad instead of Japan. Such goods as raw cotton and pig iron which are both imported into Japan to a certain quantity, can also be replaced by the American and Indian products, should Japan fail to secure these goods from China.

As to exports from Japan to China, cotton piece goods and yarn which stand first in the export statistics, marking far greater margins as compared with other merchandise, are consumed by the middle and lower classes of the Chinese to the greater extent of 30 per cent. of the total production of the same in Japan, but it should be noted that the commodity has fought its way to the markets of East Africa, Middle East and South Sea Islands. Japanese sugar, sea products and paper, which have been greatly favored by the Chinese markets can hardly be replaced by another foreign alternatives, in view of their special position in China, but such articles as metals, machines, chemicals and coal may be curtailed at the cost of both Japanese importers and Chinese consumers, resulting in an internecine struggle, and should the worse come to the worst, causing the entire stoppage of the movement of these articles, there will be a general advance of prices, which will threaten the standard of life of the Chinese.

In the long run, China will be the loser, not only in her trade, but in the Customs revenue, owing to the "patriotic" manoeuvre whereby Young China wants to attain their "legitimate aspirations."

Book Reviews

Mr. SOKOLSKY'S UNIVERSAL HISTORY*

"An Outline of Universal History."—By George E. Sokolsky, Shanghai: The Commercial Press Ld. 1928. Price, M. $5. net

To write even an outline of the history of " all peoples, nations and languages" in less than 900 pages of by no means too small print, is a task to appal the stoutest heart. But this is what Mr. Sokolsky has done and, it may be added without a trace of flattery, has done extraordinarily well. Using the simplest language, selecting essential facts with fine judgment and by means of untiring energy, he has woven a comprehensive tapestry in which the relationships of one epoch to another, of one invention or innovation with successive developments, and of practically every nation within the family circles of the human race, are at once blended and defined with striking effect and interest. " An Outline of Universal History" is far more than the text book for Chinese students it was primarily meant to be. It has the greatest interest and utility for Western readers. We congratulate and compliment Mr. Sokolsky on the brilliant skill and mastery with which he has discharged his formidable task.

From the East Westward

There is an attractive preface by Dr. Hu Shih who dwells on the fact that Mr. Sokolsky has been the first to view the world from the East westward. The difficulty here, Dr. Hu Shih points out, is that Chinese history is a closed book for western readers. He goes on, however, in perfect fairness to imply that it is also to a large extent a closed book to the Chinese themselves. The contrast between Asiatic and European history consists in the appaling sameness of the former. While Europe can be seen moving slowly and painfully from stage to stage of social and political development, Asia reveals little but a monotonous alternation of frightful slaughter, of brief periods of benevolent but none the less despotic autocracy and then again more slaughter. The strong man emerges, rules well for a time and his people have peace, but he leaves no successor and there appears no political instinct among his subjects which can grasp what he has given and make it a permanent part of themselves. The story of Solomon, of Rehoboam and of Jeroboam is, politically, a microcosm of Asiatic history. It is only in recent years that a section of the Chinese people conveniently called Nationalists, though this word at present is rather unfairly associated only with Southerners, as if all the North were atavistic and blind, has really begun to think politically. And when we consider how short the time they have been doing so and how barren their background, we should rather admire the real headway that has been made than only deplore the chaos temporarily inseparable from it.

Mr. Sokolsky starts from the earliest legendary period of the origins of man, of which many quaint stories survive. Not to court controversy, one may well feel that the story told by the Book of Genesis is at least as good as all others and in many respects better.

This section rapidly brings us to the undoubted fact that, while Asia gives nothing to the world politically, in religion she has given everything. Christ, Mahomet, and Buddha. It is indeed a case of *ex Oriente lux*. Similarly the great migrations of peoples seem to have had their origin in Asia, with one notable exception, namely the Norsemen who discovered America on the one hand and penetrated through Europe even to Constantinople itself. Mr. Sokolsky has wisely given a good many pages to this numerically small but characteristically all-potent people whose architecture and customs continue to influence us to this day and whose travels are the first recorded example of the enormous influence of sea power. We do not forget the Phoenicians as sailors and merchants, but their area of operations was small compared with that of the Norsemen and their influence vanished in the greater power of Rome. This again might lead one to moralize on nations which had tremendous influence in their own times, but have left none for posterity. Contrast the empires of Assyrians, Persians and Egyptians and how little they really mean to the world to-day, with the inexhaustible legacies of tiny little Greece, which indeed can be narrowed down to something still smaller, the single city Athens. Here again one notices how wisely Mr. Sokolsky has dwelt upon epochs, nations and individuals whose existence left something to weave into the texture of the whole history of mankind.

In this connection the pages given to the Church of Rome and the birth of nationalism. The latter he ascribes, in one passage, to the French Revolution. That is true enough in one respect as we think of Kossuth, Victor Emmanuel II, Garibaldi and Cavour, of the Greek struggles for independence, of William I and Bismarck. But obviously, and Mr. Sokolsky shows he would never question it, nationalism goes back much farther than that. In the greatest ascendancy of the Church of Rome, national borders meant nothing. There were the kings and nobility and the serfs. Lands were to the *beatus possidens*. And while the aristocracy, wholly illiterate, fought and slew each other, Rome preserved some continuity of law and learning. The Crusades began the breaking down of the old feudal system and in England the Wars of the Roses finished it off. On the Continent it lasted much longer. In England, Henry II's French wars, when he accepted money with which to hire mercenaries instead of service, and left the country gentlemen at home to manage their estates, combining with the peculiar political and judicial genius of the English people, brought about a state of social and political stability far ahead of what was to be found contemporaneously on the Continent. But England being an island, her influence on the Continent was practically nil until her people began to " run across the seas changing their skies but not their mind." It is interesting to reflect how large a part the Puritans (another offshoot, by repulsion, of Rome) contributed to this migration, first by driving abroad the churchmen and then by being themselves driven abroad.

The Economic Revolution

The economic revolution of the world is treated with great skill and insight. In England for a few years cotton mills and steam power literally threw many workers back into serfdom. Robert Owen's is a great name to remember in the process of emancipation. It is strange to think that his were the ideas which to-day seem destined to be the solution of the industrial upheavals that began over a century ago and still are not settled. Karl Marx has had his day. The influence that his frightfully heavy and involved writing has had on the world is one of the marvels of history. But even Russia will free itself presently from the misconception of his teaching in which proletarian teachers have thought they discerned an earthly paradise. The economic revolution and the consequent spread of trade brought back the West and East into direct conflict once more. This part of the story is remarkably well told by Mr. Sokolsky, who shows very clearly where the conflict really lay, the East hugging its seclusion, the West insisting with equal determination that no country can cut itself off from the rest of the world. Accepting this view as possibly correct, it follows that the West has an enormous responsibility to discharge in return for forcing itself into the East and disrupting it with its strange and alien ideas of progress. Precisely how this responsibility is to be discharged has not yet been solved. Everyone knows how Japan took the matter into her own hands and profited by the lessons of her invaders in a manner without parallel in the world's history. But the case of China is more difficult. At least, however, Mr. Sokolsky's book may help, by revealing to Chinese thinkers how many other peoples have had to tread the way along which they are now struggling, and to those other peoples how great a similarity exists between China's misfortunes and their own earlier chapters.

Within the Four Seas

The story of the French revolution and of its importance to the world, which was really born of the works of thinkers just prior to it, is remarkably well told ; and there is an excellent survey of the world war, the Washington Conference and the Chinese revolution. During the past 120 years the world has been growing both greater and smaller. History has become infinitely more complicated as it gradually ceases to be a mere kaleidoscope of dynastic intrigues ; and at the same time simpler, as all nations begin to come into a common focus under the impact of common ideas. " Within the Four Seas all are brethren." Mr. Sokolsky's history shows convincingly how the world has at last been brought to a point at which it may make, if it wishes, a new start with mutual understanding. One wonders what future historians will have to tell of the use it has made of the chance.

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*" North-China Daily News"

We have not space to deal with Mr. Sokolsky's chapters on art, science, law, literature and social developments. They are all full of interest and most cunningly woven in at the precisely suitable point with the rest of the outline. The one blemish on the book is its illustrations. There are some good, useful maps, and vignettes of old buildings and fanciful subjects are inoffensive. But the portraits are really egregious. Chinese readers may judge of others by the representation of the people they know. Where the publishers unearthed these blocks one cannot conceive, but the guiding principle seems to have been, A picture a page at any cost! In the circumstances one is rather relieved that, alone among heroes of the Great War, not a single British general or admiral appears, an exclusiveness which might otherwise have seemed invidious.—O.M.G.

NEVER AGAIN!

Vicious Propaganda Irreparably Ruins China's Good Name in the United States

Two new books on Pacific questions have recently appeared from the pens of exceptionally qualified American experts. The Restless Pacific" by Nicolas Roosevelt and "Back of War" by Henry Kittridge Norton, should be read by every student of Far Eastern affairs. They both see the issues clearly and state the facts in a manner that completely justifies the American-business community in China for its stand in defense of their treaty rights during the present upheaval in that country. Both books carry a special message and a warning to Chinese propagandists.

Never again will American writers in the pay of Peking or Nanking be able to bamboozle the American public, or put over any propaganda inimical to our commercial interests in China. American newspaper editors will never forget or forgive how they were imposed upon by the vicious propaganda of last year, which, had it not been for the cool judgment of the State Department would have resulted in the withdrawal of our war-ships and troops and the massacre of every white man in Nanking and the violation of their women. China's cause in the United States has been irreparably injured by reckless abuse of the truth on the part of American journalists who prostituted their profession at a time when loyalty to their own kind became the supreme test of their Americanism. The American Chamber of Commerce of Shanghai is fully supported by these two authors.

Mr. Norton is Secretary of the American Asiatic Association, in intimate touch with the thoughts of the heads of parent American trading and manufacturing firms whose subsidiaries and agents to a large extent are members of our national chambers of commerce in Japan, China and the Philippines. Mr. Norton evaluates the forces that have made and now make for war in the United States and places before us concrete facts and figures which support his thesis. These figures are startling. He shows that our foreign trade has grown from $3,900,000,000 in 1914 to $9,250,000,000 in 1926; our foreign investments have jumped from $2,250,000,000 to nearly $12,000,000,000, in addition to government debts in the same period. The net tonnage of our shipping in 1914 was 27,500,000; to-day it is 54,000,000. Over 100 branches of American banks are established in foreign countries, whereas, outside of the International Banking Corporation's branches, we had none in 1914. There are now 30 American chambers of commerce in foreign countries, instead of three as in 1914, with 3,500 members as against 100, in 1914. In 1914, 23,453 passports were issued. Last year the number was 193,000.

We have stepped into the front rank of nations in wealth, in power, in influence. We are at once the world's greatest creditor and the world's greatest competitor. There is not a move in the world that does not affect our interests, and there is no international purpose on which our action is not of the highest importance. On many of them it is vital. At every turn our interests cross those of a half a dozen other states. In Europe, in Latin America and in the Far East, we are deeply involved in the most intricate world problems. A false step may provoke anger, may invite retaliation, may lead to war.

This new position, as Mr. Norton points out, imposes upon us new responsibilities, new dangers, new obligations, and new opportunities. It has become a matter not only of humanitarianism but of supreme national interest that we should assist in the problems of world peace. To do this intelligently and constructively, it is highly necessary that we understand and appreciate at their full value the multitudinous causes of international conflict. Nowhere do these causes that lead to war so vitally affect the peace of the United States than in the Far East, where it has become accepted as an axiom that in some way or other we are committed to stand as the champion of China against all the other Powers. Nowhere in the world is such an intensive propaganda carried on having this objective in view. It is the patriotic duty of every American writer to present all sides of these problems, so that the American people will have a better understanding of them when they become acute.

Speaking of our national policy and diplomacy Mr. Norton rightly says that it follows so closely the desires and opinions of the people whom it represents that its level will rise just as rapidly as that of the national thought. He then goes on to say that it does not disprove this relationship to show that in specific instances the diplomatic attitude was not so idealistic as the popular opinion. China during the years 1925-1926 offered such an example. The opinion was very widespread among the American people that China had been vastly abused by the foreign powers, that these powers still held it bondage by unequal treaties, and that the Chinese people were entitled to an immediate revision of these treaties. The State Department refused to adopt a similar attitude. For this it had good reasons. *It knew that American public opinion was influenced by grossly inaccurate statements of the Chinese situation, by Chinese spokesmen in this country, and by certain missionaries whose work made it impossible for them to oppose the aspirations of the most radical Chinese.* It knew also that China was utterly disorganized governmentally, and that to waive the protection of the old treaties would be to expose American lives and American property in China to grave danger, with possible serious consequences. It knows that the only possible hope for real progress was the establishment of a government in China that was able to carry out the international obligations customarily assumed by independent governments in relation to the persons, property, and rights of foreign nationals within their borders. The State Department felt warranted in applying the brakes to public opinion, because it knew that in practically every case where the advocates of over generous action towards China were apprised of all the facts and conditions, these persons at once modified their views and supported a more deliberate policy. From this, the State Department was warranted in arguing that American opinion, would when properly informed, support its more cautious attitude towards Chinese nationalism. In this case, events have more than justified the Department's judgment, and American public opinion, as it has obtained more detailed knowledge of the situation in China, has found little to criticize in the Department's policy."

Emphasizing the effects of propaganda as one of the contributory causes of war, Mr. Norton very properly says:

"Propaganda is an organized dissemination of a point of view. Every newspaper editorial and every news dispatch which departs from a bare statement of the facts is in some sense propaganda. It is entirely justifiable, and our democratic system is built upon the theory that every point of view will find adequate room for expression. Propaganda assumes a vicious tinge when it begins to suppress essential facts, or to distort other facts to its own ends, and becomes wholly vicious when it is built upon an outright mis-statement of facts."

He invites attention to an example of wholly unjustified propaganda as furnished by the Nanking incident of March 24, 1926. He recounts the facts in this case and says that immediately upon the morrow of the incident, Chinese Nationalist and Russian Communist propagandists broadcasted reports that the unarmed city of Nanking had been bombarded by American and British ships and that 200,000 unarmed Chinese had been slaughtered. Here, he says, "was vicious propaganda at its worst. Facts were utterly disregarded in the effort to create a public opinion based upon false premises."

Nicolas Roosevelt in "The Restless Pacific" also scathingly denounces the campaign of the Chinese Nationalists and their American newspaper friends in the spring of 1925. He says:

"As a matter of fact, their campaign was in many ways one of the most remarkable examples of bamboozling propaganda that has ever been attempted in this much-bepropagandized nation. Chinese spokesmen and their American friends presented a picture of China so skillfully concocted of half-truths that for awhile it deceived well-informed persons. But as usual, misrepresentation hurt, rather than helped, the cause which it was designed to further. With unparalleled impudence they played on American ignorance of things Chinese to drum up American sympathy without regard to America's interests and with but little adherance to facts. They described China as a modernized republican state like the United States, whose citizens were being daily murdered and robbed by foreigners who had despoiled the poor down-trodden Chinese of their liberties and wealth. China was said to be shackled by the "unequal treaties" and overrun by foreign soldiers and gunboats. Law and order were pictured as prevailing everywhere in China, and by way of "proof" the fact was cited that when money is transferred from bank to bank in the United States it goes in an armored car under guard, whereas in China it is taken in an open wheel-barrow. Many other similar plausible but irrelevant parallels were brought forth, all carefully couched in language to make the ignorant think that conditions in China were the same as those in the United States."

Mr. Roosevelt then goes on to relate how the campaign culminated in the attempt to force through Congress a resolution fostered by professional advocates of the Chinese cause and supported by the Chinese Minister, calling on the President forthwith to negotiate with representatives of the Chinese people for the revision of all treaties.

"When this resolution passed the House the Chinese Foreign Ministers (North and South) cabled their congratulations to the Chairman of the House Committee on Foreign Affairs. It is easy to imagine the sensation that would have occurred had agents of Great Britain, for example, endeavored to ram a pro-British measure down the throats of the American Government without regard to American interests, and had Lloyd George or Sir Austin Chamberlain thereupon cabled congratulations to the House leader. But the American people, easy going and always anxious to please the Chinese, dismissed the incident on the ground that conditions in China were not normal."

Summing up his idea of foreign policy towards China, Mr. Roosevelt says: The true principles of conduct for the nations are;—to preserve the territorial and political integrity of China; to abstain from interference in her internal affairs; to demand equality of commercial opportunity for all nations and special privileges for none; and to expect the Chinese to observe the accustomed practices of civilized nations with regard to the rights of alien lives, property and interests in their territory. However desirable may be the revision of the treaties, there is no reason why the foreign powers should abandon their rights before China has shown at least a sign that she is capable of fulfilling obligations which a civilized state assumes towards aliens according to the accepted practices of international law."—G. B. R.

British Cotton Combine

(Continued from page 250).

It will take in the mills that are now in the hands of the banks. It is believed that only $15,000,000 of new capital will be required. This will be furnished by the banks, as there is no market for cotton shares in England at the moment.

Will Result in Economies

The new combine is expected to reduce overhead charges, regulate production, systematize the buying of American cotton and enable the mills to have an efficient sales department. If it succeeds, then American cotton-growers will have only one buyer in England, instead of hundreds. This is the one fact about the new scheme that directly concerns the United States.

Already the scheme has been approved in principle. It has been accepted without a dissenting vote by the members of the Cotton Yarn Association. The next step is to appoint a committee of valuers to determine the exact worth of each mill and the number of shares that shall be allotted to it. There will be drastic writing down of capital.

This movement towards amalgamation has been forced upon the English spinners. There seems to be no other way to stop the fierce competition and price cutting. The banks are insisting upon amalgamation and they are in control.

Conditions Unsatisfactory

It is the "American Section" of the English cotton trade that is in trouble. It includes two-thirds of all the spinning mills in England. They spin American cotton into the coaresr grade of cloth. The other third of the mills spin Egyptian cotton into finer grades. These mills are prosperous, as they have at present no serious competition.

The fact is that England has lost 38 per cent. of her foreign trade in the coarser cotton cloths since 1913. England exported 7,000,000,000 yards of cotton cloth in 1913 and only 4,300,000,000 yards last year. The "American Section" of the cotton trade is at present in a condition verging on bankruptcy. Last year, 94 spinners and 79 cotton merchants became bankrupt. All of these were in the "American Section."

The mills of Oldham, all of which spin American cotton, now owe the banks $20,000,000 and are making no profits. Dozens of mills are being dismantled, and the machinery is being shipped to India or China. As the English say, it is a case of "Lancashire under the hammer."

There are 70,000 cotton workers unemployed. Manufacturers are now demanding a 12½ per cent. cut in wages. The trade unions have refused to consider it. So what with the trade unions on one side and the banks on the other, the spinners are being forced to amalgamate.

Hit by Competition

The "American Section" has been hit by the handlooms of Asia, the competition of Japan and the foreign tariffs. Lancashire made a club for its own back. In the past 25 years it has exported about $800,000,000 worth of cotton-mill machinery, and now it has competition in a dozen countries.

Japan now has 241,000 power-looms, one third as many as there are in England. Japan is exporting eight times as much cotton cloth as in 1913 and cotton production in India has trebled. Actually, a shipment of 5,000 pieces of cotton cloth was imported into England recently.

The English cotton trade had its Golden Age just after the war, when there was a world-wide shortage of cotton cloth. During five years, 1915 to 1920, all records were broken, both for production and profit.

The cotton manufacturers for a time made sixteen times their usual dividends. They made a profit of two cents an ounce instead of two cents a pound. They were the most successful profiteers in England. There were 150 companies that paid 40 per cent.

Tremendous Post-War Speculation

In 1919 a wave of speculation swept over the cotton trade towns. Everyone gambled in cotton-mill shares. The people went cotton-mad. This made the cotton manufacturers arrogant in their trade relations. Their motto was—"If you don't like it, you can lump it." They had no fear of competition.

"We have the only climate in the world where cotton piece goods can be produced in large quantities," they said. "We have the most highly skilled workers and we have more spindles in the one town of Oldham than there are in all the rest of the world put together. We are at the top of the cotton trade and we always shall be."

Then came seven terrible years of slump—1921 to 1928. The India trade was cut in half. There were no dividends. All told, there has been a loss of over $1,000,000,000 A Cotton Yarn Association was organized, but it broke down because it could not prevent price-cutting. When one of its members was fined, he resigned.

Consequently, pushed on by the banks, the cotton spinners in the "American Section" now are being compelled to amalgamate. The new combine, they hope, will bring back the prosperity that has been lost.

New Waterworks and Electricity Plant in Chapei

THE Chapei Electricity and Waterworks Company has erected one of the largest waterworks plants in the Far East, built for the most part during the troubled year of 1927, which has just been put into trial service and is proving itself capable of delivering up to 20 million gallons of filtered water every 24 hours.

A contract for the first lot of the equipment of a new power station, the ultimate capacity of which will exceed 50,000 kva., has just been awarded the Skoda works, of Prague, Czechoslovakia. The plant is expected to be completed during the second half of 1929.

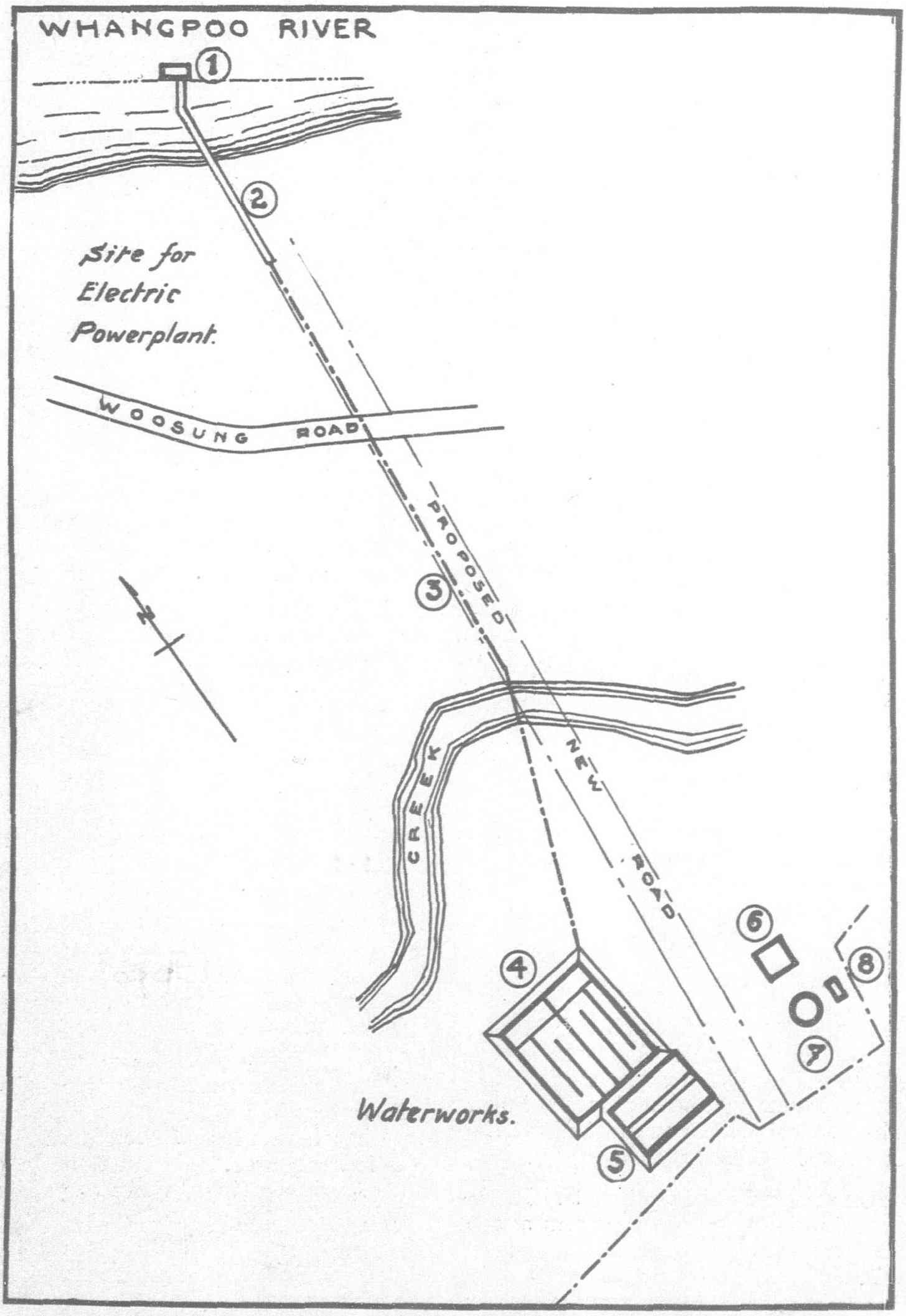
In 1919 the Kiangsu Provincial Government established the first water and electricity works Chapei enjoyed. The entire investment amounted to only M.$450,000. The small and poorly constructed plants were inadequate for serving even a portion of those districts which they were intended to serve. Chapei had, in 1919, a population estimated at about 300,000 people. The waterworks, with the pumping station located on Soochow Creek, adjoining the Chief Depôt of the Shanghai-Nanking Railway, had a capacity of less than one million gallons, and the electric plant consisted of two steam-driven sets of 50 kw. each, generating direct current of 440 volts. The waterworks, besides being under-sized and inadequate, did not properly filter the water, with a result that it was hardly fit for human consumption.

The power plant, with its entire output of 100 kw., could supply but a very small fraction of the entire demand. An agreement was reached with the Shanghai Municipal Electricity Works by which the Chapei plant was able to buy from the municipal plant the 1,200 kw. needed above the output of its own plant. The electricity was bought in bulk and distributed by company-owned lines to the consumers.

Chapei kept step with the International Settlement in the growth which visited Greater Shanghai in the years immediately following the World War. During this wave of prosperity and rapid development, and with the launching of every new building project in the International Settlement or in Greater Shanghai, new laborers and mechanics from other parts of the country were needed. The supply was equal to the demand, and these workers from all China poured into Chapei, the Chinese district offering the most convenient living quarters. Landlords began to build houses for the workers and their families. Besides the small industries that had begun to spring up, those that had been long-established felt an increased demand for their manufactures, and enlarged their quarters.

The large Chinese concerns began also to build in Chapei; the erection of these huge factories attracted workmen, and the operation of them on their completion attracted still more. A result of this industrial expansion was that Chapei, and the districts to the North which reach almost to Woosung, more than doubled their population within the space of a few years.

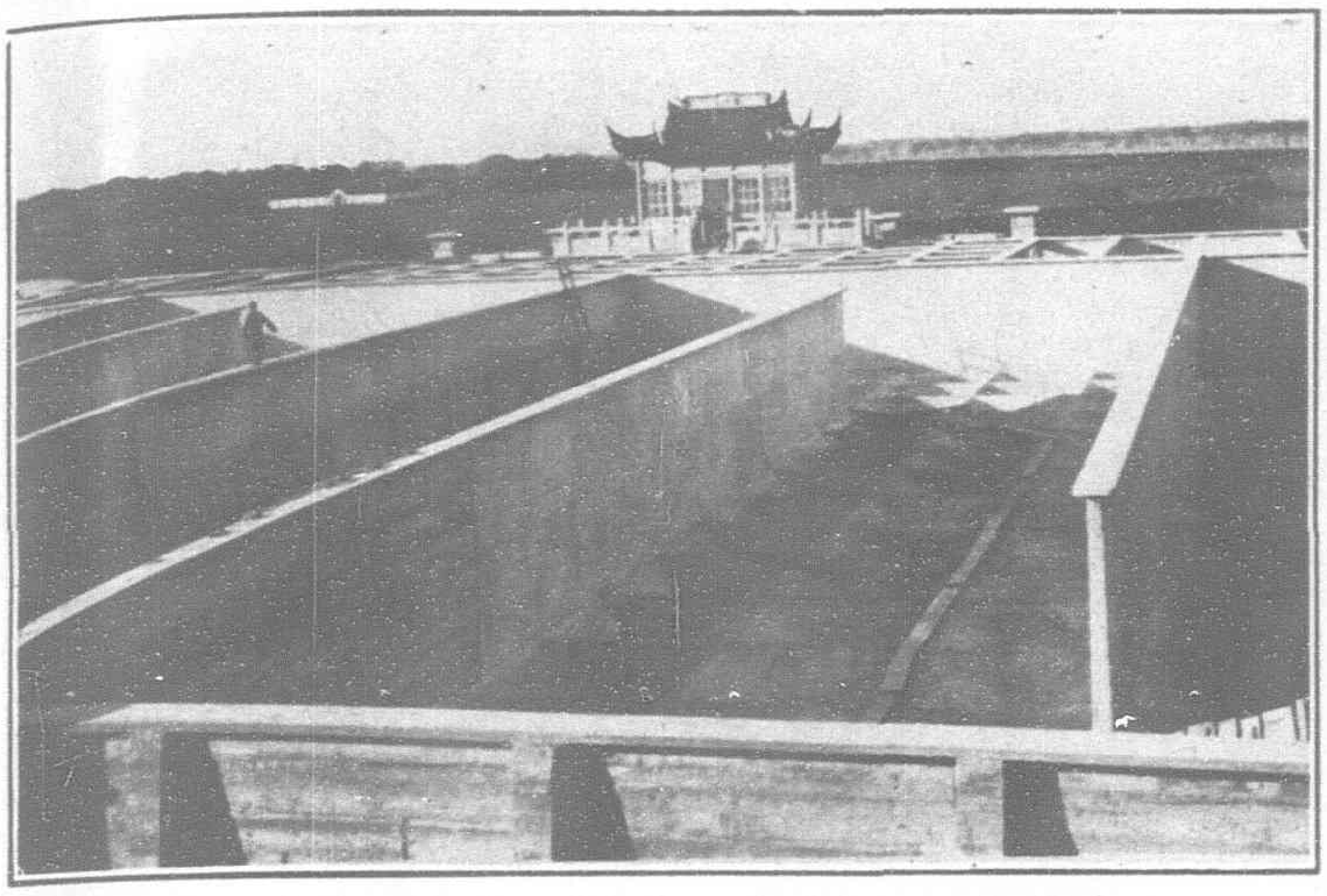
The old Chapei water and electricity works could not cope with the ever increasing demands. While the population doubled, complaints piled high. The Chapei inhabitants addressed appeals to the Kiangsu Provincial authorities for assistance. Finally, as a result of the pressure brought to bear by various Chapei business organizations and by the connivance of other circumstances, the Provincial Government consented to transfer the waterworks and the power plant to a private company to be organized among various merchant bodies in Chapei.



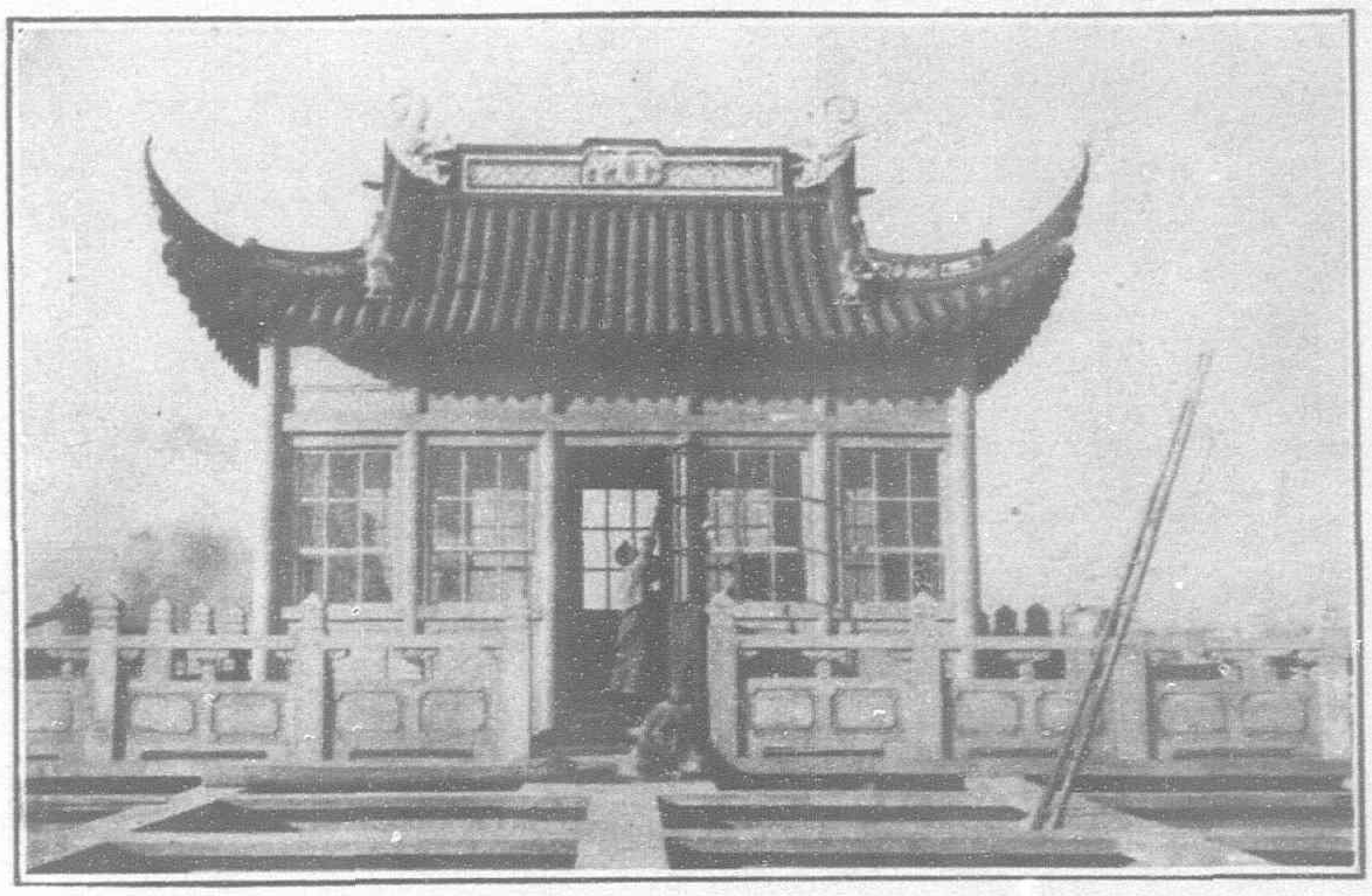
Situation Plan —(1) Intake Pumphouse; (2) Pipe Bridge; (3) Intake Pipe; (4) Coagulation Plant; (5) Quick-Filter Plant; (6) Main Pumphouse; (7) Watertower and (8) Transformer House

New Plant

In July, 1922, a large meeting was held in which almost all the business organizations of Chapei were represented. A company was formed and officers of the new company were elected. The new organization was to have a capital of M.$3,000,000 represented by 300,000 shares of ten dollars



Coagulation Basin with Chemical House in Rear

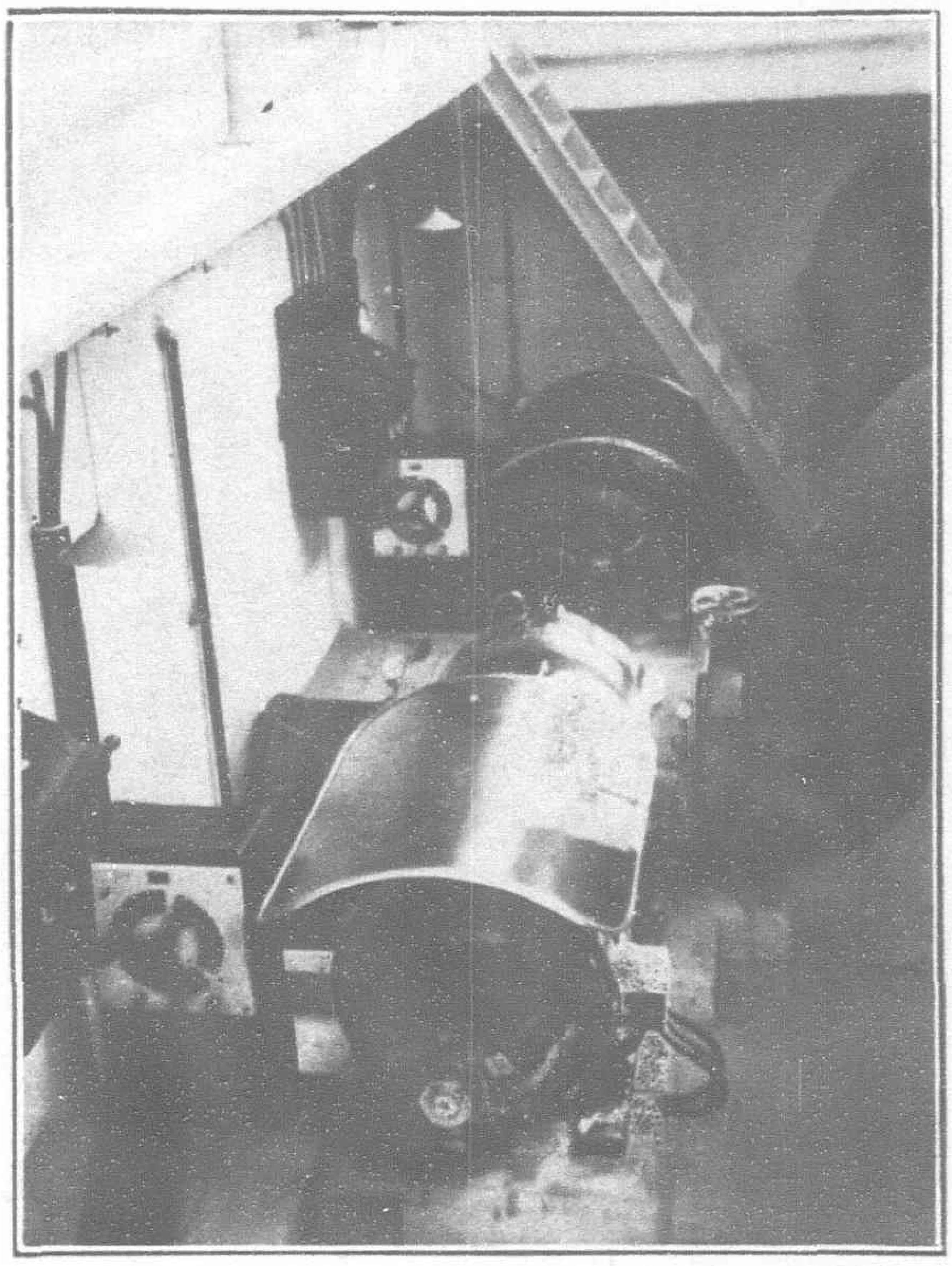


Near View of the Chemical House on Coagulation Tank

each. It was decided at the first meeting of the shareholders to build a new power plant which would be ready before the expiration of the contract with the Shanghai Municipal Electricity Works, scheduled to terminate in the Summer of 1924. New waterworks were to be built after the completion of the power plant.

Official approval of the proposed company and their plans by the Kiangsu Provincial Government was not forthcoming immediately. The actual working of the company was thereby delayed. Constant complaints about the bad quality of the water supplied from the waterworks, meanwhile, caused the new company to change its original plans and to begin considering the erection of large and properly equipped waterworks which would supply the whole district with water of a quality responding to all sanitary requirements. Erection of the power plant was postponed.

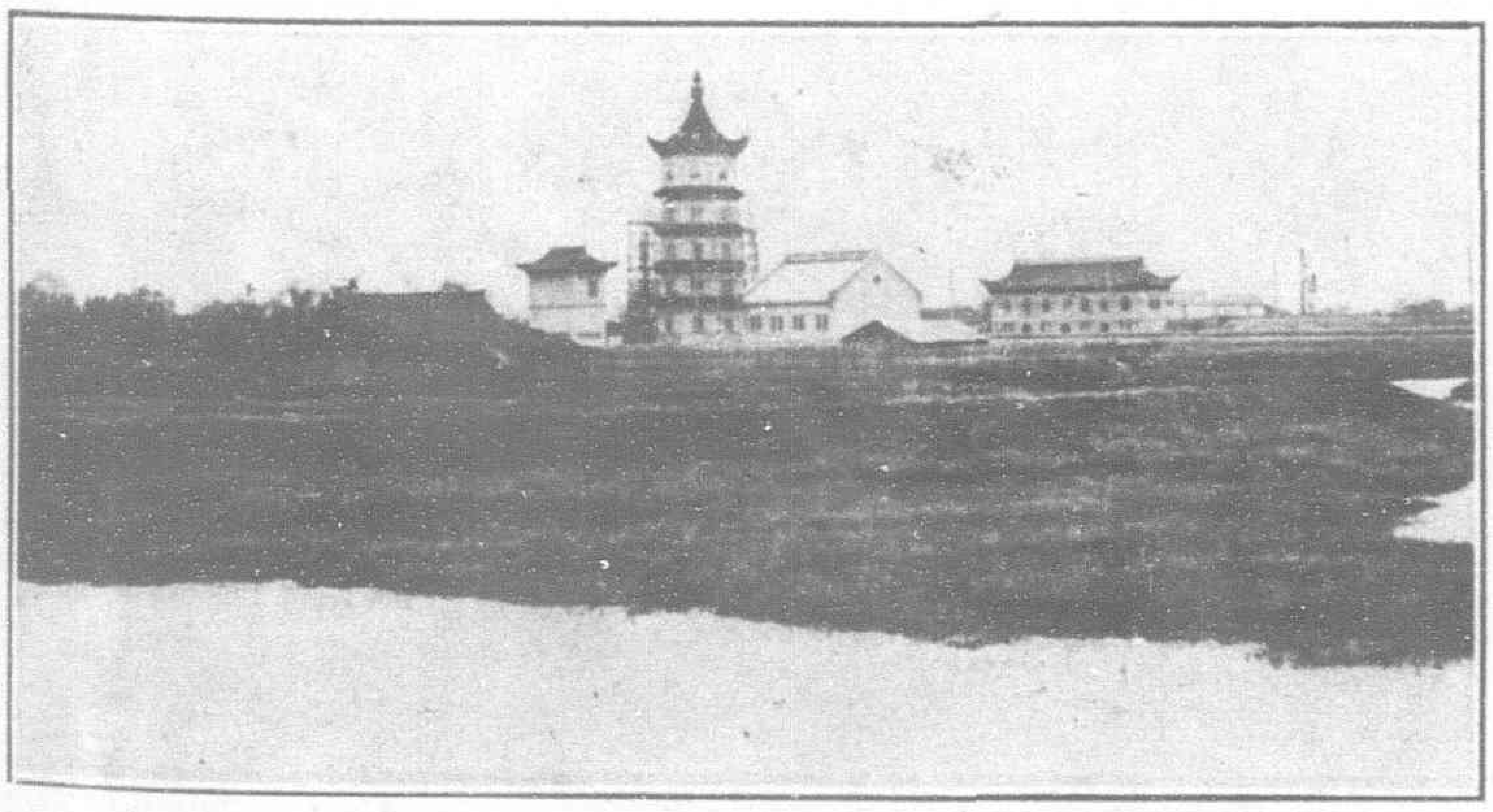
In the beginning of 1926, the new company, finally approved by the Kiangsu Provincial authorities and under the name of the "Chapei Electricity & Waterworks Company," began work on the new waterworks plant. A suitable plot of land, about 27 acres in size, was procured on the left bank of the Whangpoo River, about halfway between the northern limits of the International Settlement and Woosung. In the course of a few months the concrete buildings of the new waterworks began to show above the flat land. It is interesting to note that in designing the buildings the old Chinese style of architecture was followed with the result that the whole plant, in exterior, will be in perfect keeping with its surroundings.



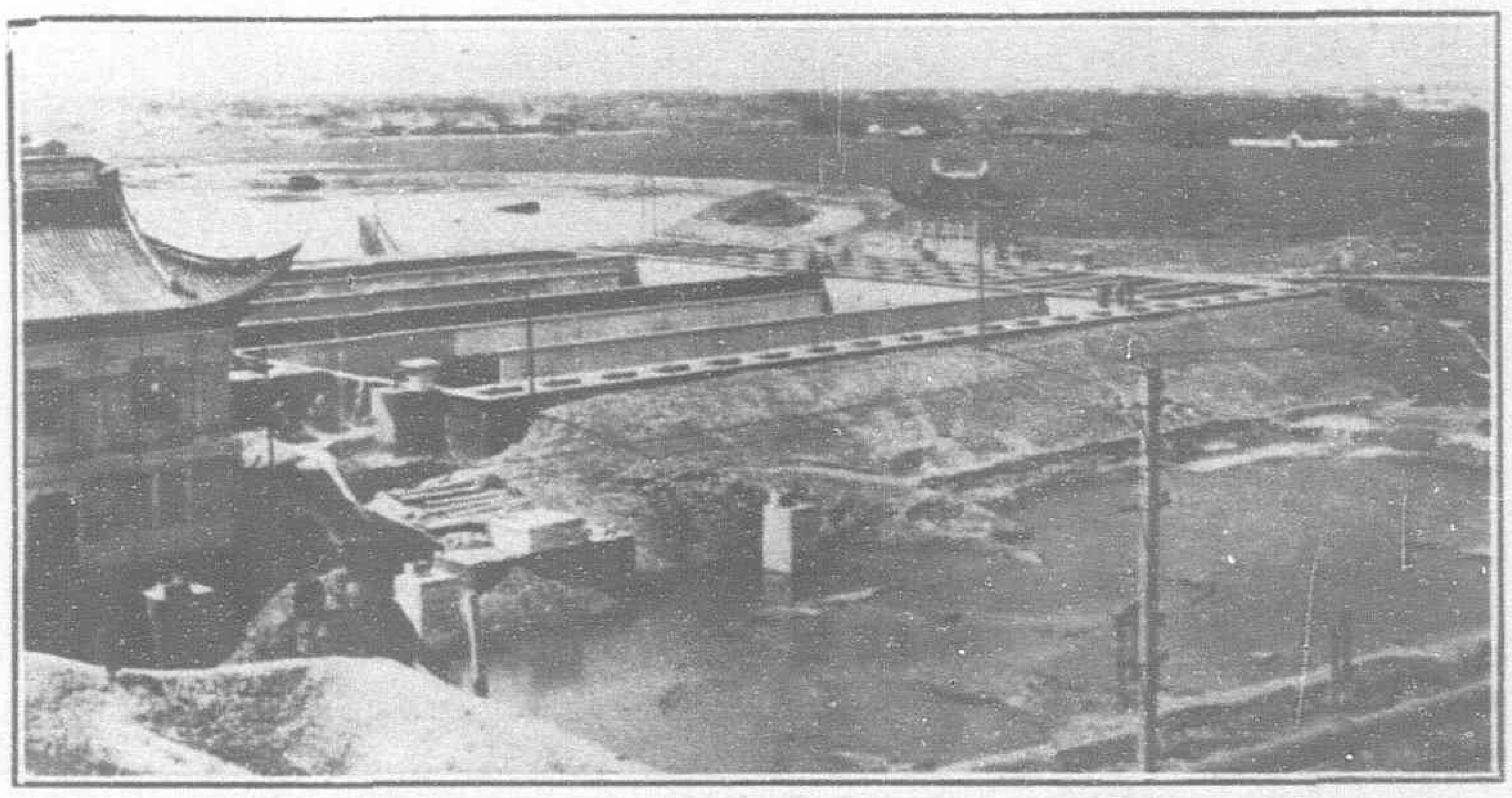
View into the Pump Pit of the Intake Pumphouse

The waterworks plant, which was completed and put into trial service a few weeks ago, has a capacity of 20 million gallons of pure filtered water per day. The raw water is taken from the Whangpoo River. A re-inforced concrete pump-house, built some 300 feet away toward mid-stream from the present shore, contains the electrically actioned water-screens, and two centrifugal, electrically-driven water-pumps. The pump-house is connected with the shore by means of a re-inforced concrete bridge which carries the intake pipes.

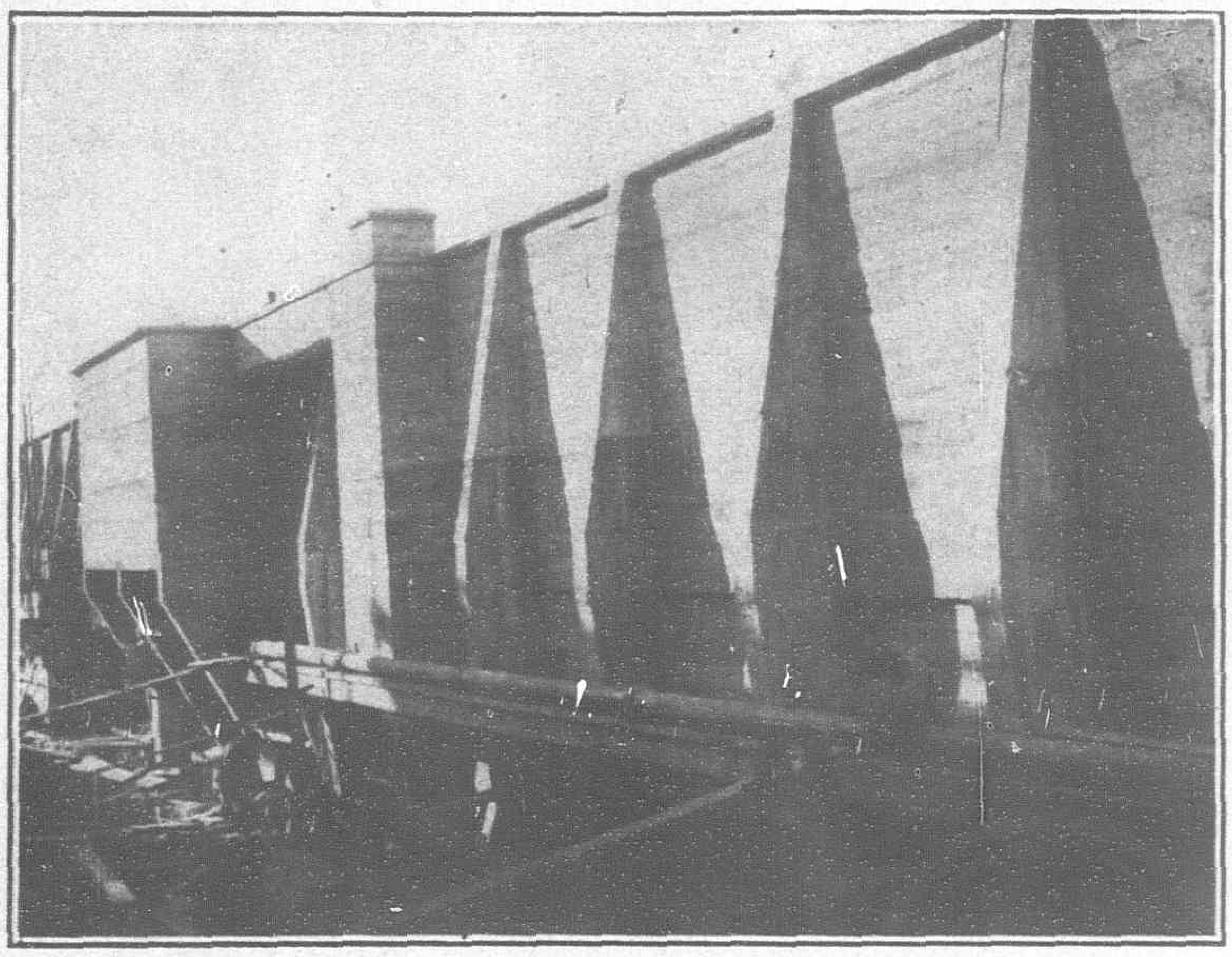
Many technical difficulties presented themselves to the engineers at the construction of the pump-house. One of these came from the fact that the Whangpoo River water level changes with the tide, and that the difference between the highest and lowest water level amounts to about 12 feet. It was necessary to place the suction strainer of the pumps so low that it would remain submerged when the water in the river was at its lowest level, and, again, care had to be taken against flooding the pump-house at extremely high tides. The very low position of the suction pipe strainer made it necessary to place the pumps low, with a result that the floor on which the pumps stand is about seven feet below the highest possible water-level on the Whangpoo, and five feet above the lowest waterlevel. Owing to the very soft ground on the bottom of the Whangpoo, both the whole pump-house as well as the bridge, had to be built upon re-inforced concrete piles, some of which are 40 feet long.



General View of the Waterworks Plant from the Woosung Road



Rapid Filter and Coagulation Plant seen from the Water-Tower

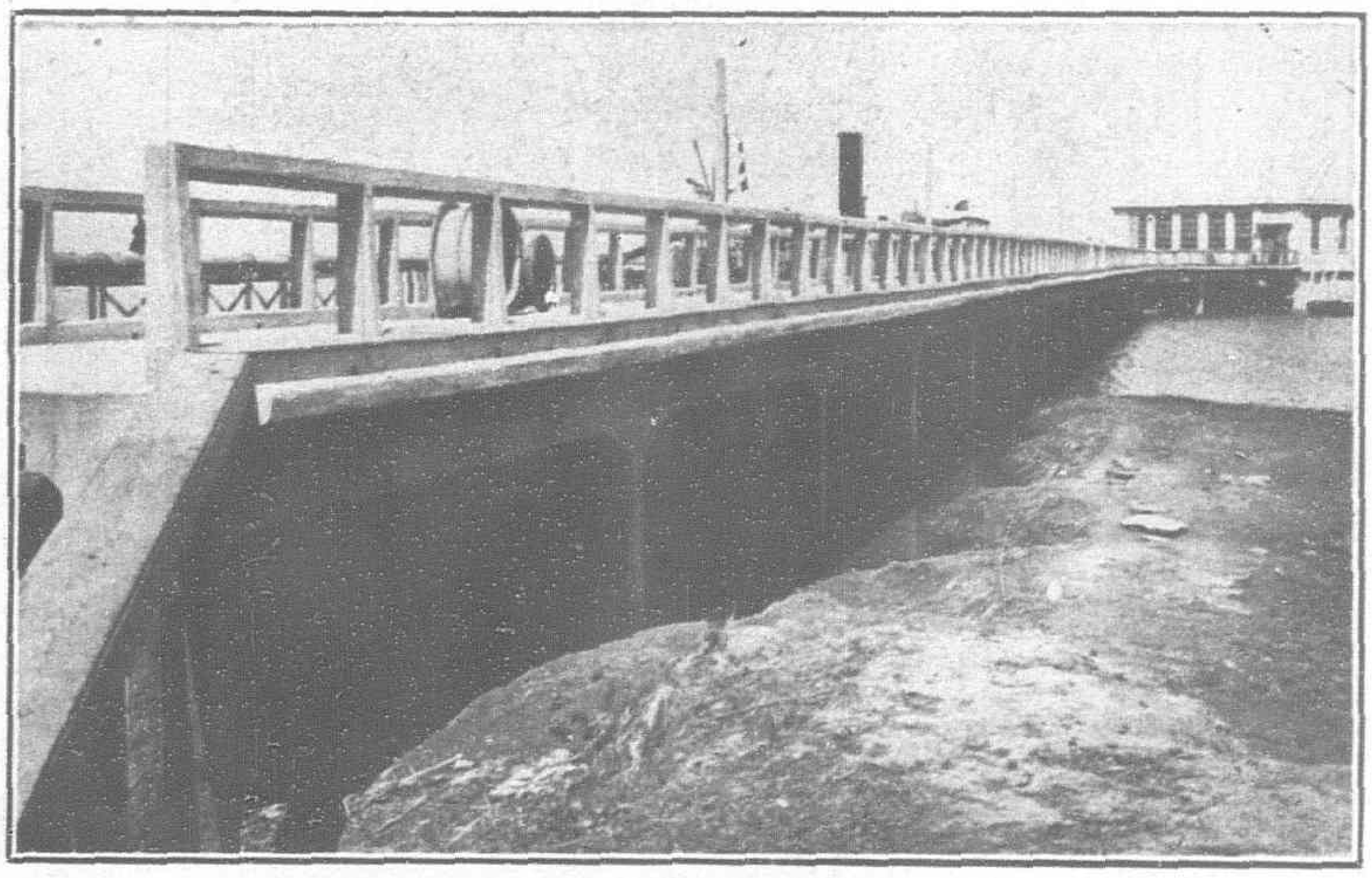


Outside Construction of the Coagulation Basin

Inside View of the Rapid Filter House

Through a line of cast-iron pipes of 36-in. inside diameter, with a length of about 1,700 feet, the two pumps in the intake house deliver the raw water into the concrete basin of the Coagulation Plant. This basin is about 200 by 200 feet square, and about 15 feet deep. It serves for cleaning the water by means of chemicals. On the inlet end of the basin a testefully designed concrete house is built which serves as Chemical House. Under the whole of the basin is a cellar, ten feet in depth, which serves as a storage place for pure water.

From the Coagulation Plant the chemically treated water passes into the Rapid Filter House nearby, where it is filtered by means of special sand filters. From these filters the water is led into the pure water storage cellar under the coagulation tank.

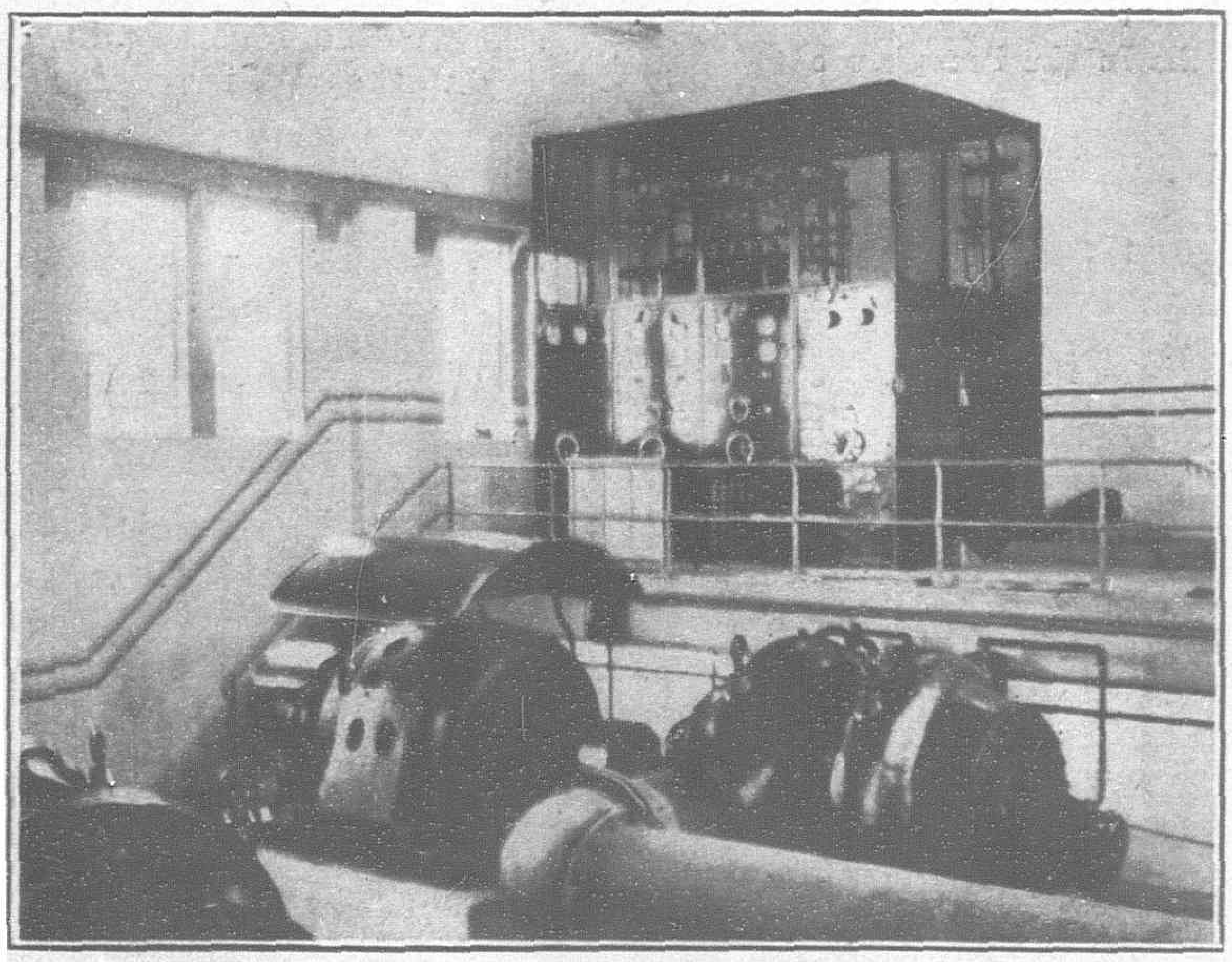


Intake Pumphouse and Pipe Bridge

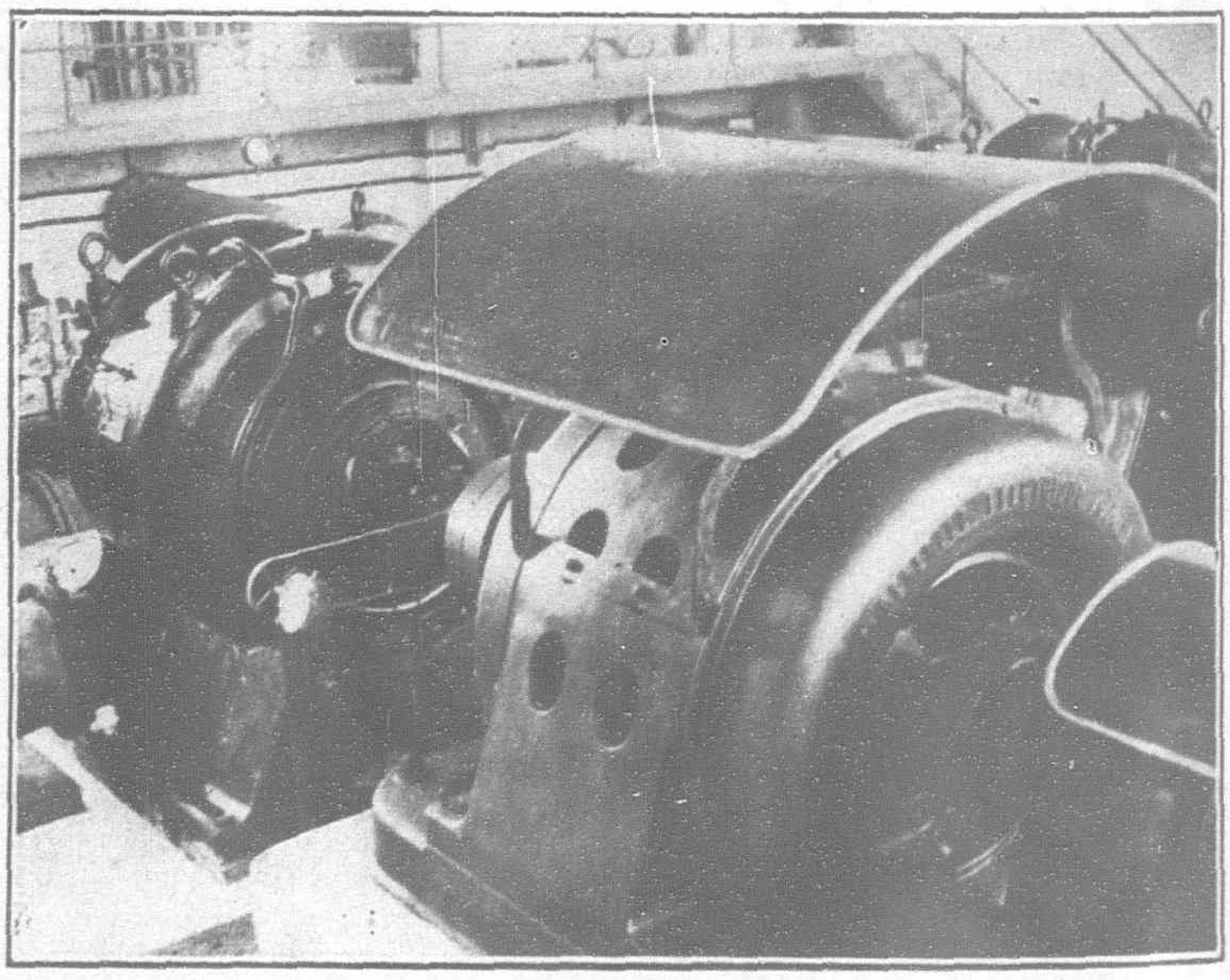
Two sets of electrically driven centrifugal pumps, placed in a separate main pump-house, lift the pure water from the storage cellar and force it into the mains. A standpipe with a water tank on its top, built in the shape of a Chinese pagoda and of reinforced concrete, serves to equalize the pressure in the main pipes.

According to Shanghai specialists the whole Chapei waterworks plant is very compact and, well designed. Due attention was paid to the possibility of future extensions. It will be possible to treble the present daily output of the waterworks plant by building additional coagulation tanks beside the present one. Enlargement of the present buildings should be possible without difficulty; the company even now owns the grounds necessary for future enlargements.

The entire concrete construction work in this plant was executed by Messrs. Tai Chong & Company was contractors, operating under the supervision and according to the designs of Messrs. C. Luthy & Company, civil engineers. All pumps were supplied by the French factories of Société Rateau, Paris. All electric equipment, including motors, was furnished by



Interior View of the Main Pumping House, Showing Main Pump Sets and Switchplant for same



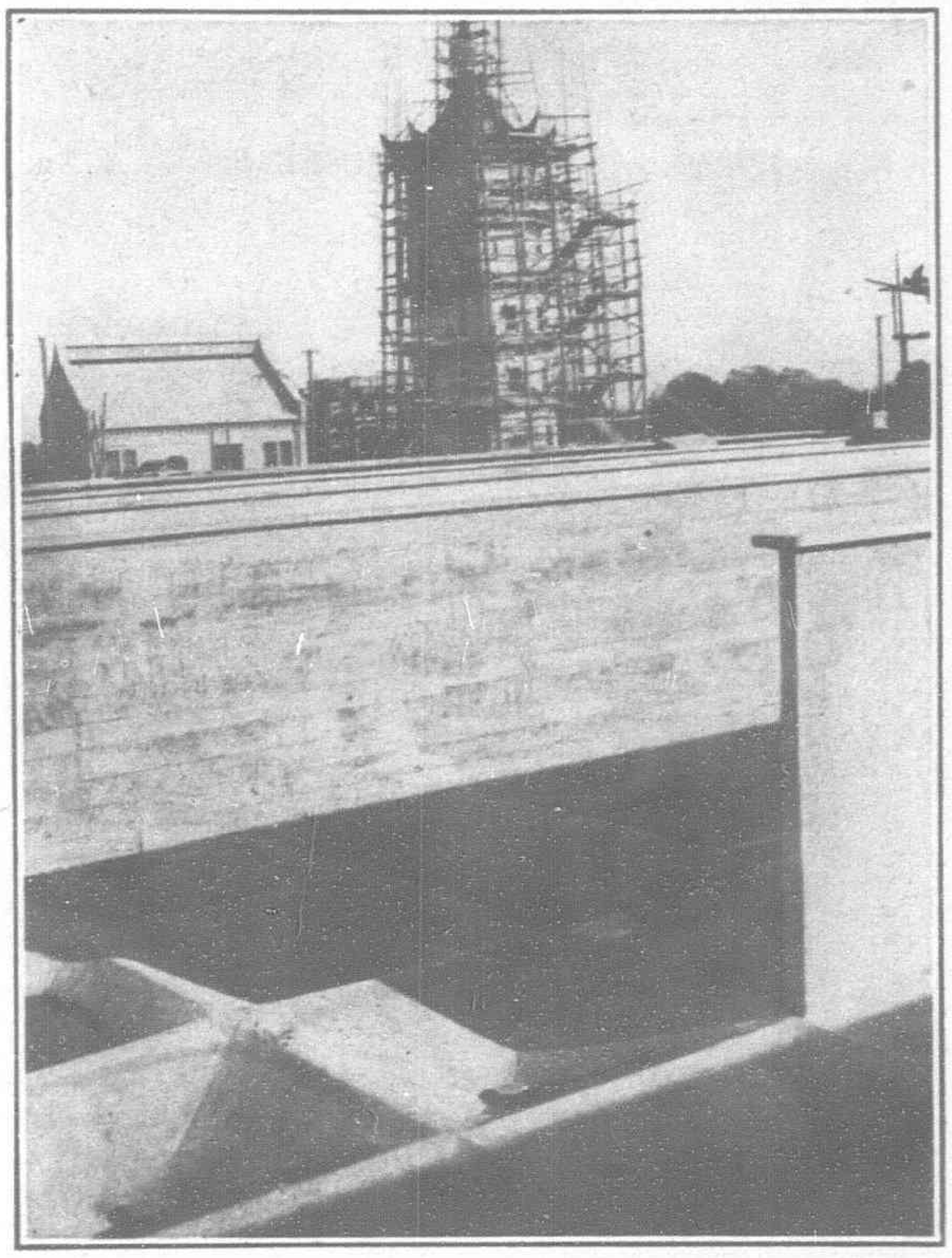
One of the Two Main Pump Sets for Delivery of Clean Water to Chapei the French factories of the Cie. Generale Electrique de Nancy. The cast-iron pipes were supplied by the Siemens China Company.

New Power Plant

In the fall of 1926, when the construction work on the new waterworks plant was well under way, the Chapei Electricity & Waterworks Company began to plan the erection of the new power station, which formed the second part of the company's building program. Specifications were sent out to all well-known makers of steam plants and electrical machinery, with the request that prices be quoted for the whole equipment of the new power plant. Quotations were to be tendered in January, 1927.

Two Turbo-Generator Sets were to be installed, according to the specifications each having a capacity of 12,000 kva, or 9,600 kw. at 80 per cent. Power factor. The generators were to generate three phased current of 50 cycles at a pressure of 6,600 volts, and the turbines were to be designed to work with steam at the pressure of 360 pounds per square inch and a steam temperature of 700 degrees (Fahr.) The necessary boiler plant, together with the complete switching plant and the necessary transformers, were named in the specifications. The ultimate capacity of the power plant, for which this machinery was to form the first portion, was to be 50,000 kva.

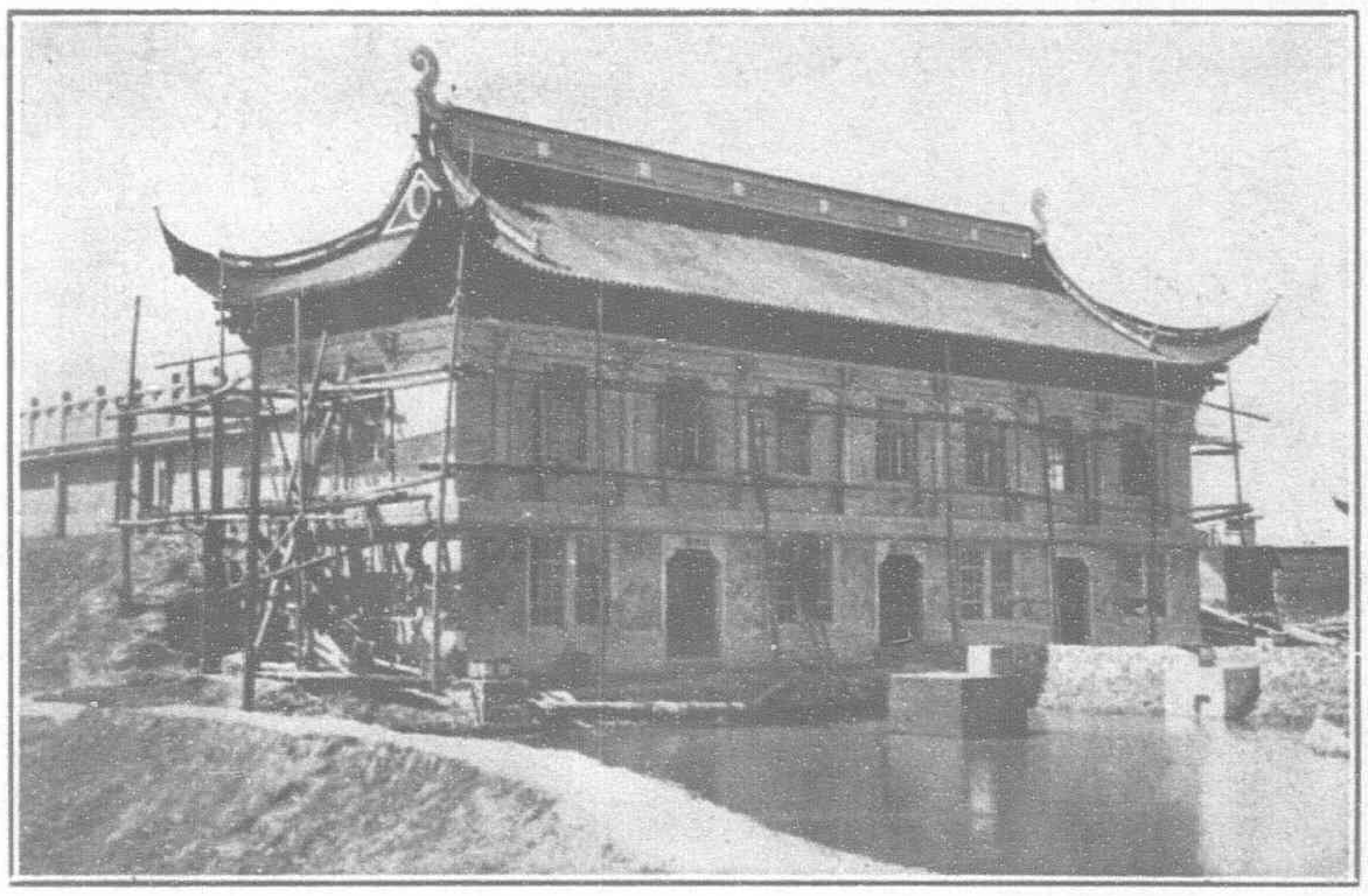
About 30 offers to furnish this machinery came from manufacturers in all parts of the world. They were received by a special technical committee which had to be formed in order that the many and very bulky proposals could be properly studied. After almost a year of careful examination by the committee of experts, the contract for the entire equipment of the power station was awarded to the Skodaworks of Prague.



Floor Construction with Mud Outlets in the Coagulation Basin

The Water Tower

Among the proposals made by the Skodaworks was one which proposed to increase the steam pressure and temperature above the limits originally given, and to design the turbines for steam of 500 pounds per square inch of pressure (instead of 360 pounds per square inch), with a total temperature of 750 degrees (Fahr.) instead of 700 degrees. The economic advantages which these changes would bring to the plant were pointed out by local representatives of the Skodaworks. This suggestion was eventually accepted by the Chapei company, and the order placed for the entire equipment of the plant with the Skodaworks.



Rapid Filter House from Outside

The Boiler Plant in the new power station will consist of three Skoda-Type High Pressure Boilers, each with a heating surface of 8,600 square feet and a working pressure of 570 pounds per square inch. Each boiler will be equipped with electrically driven mechanical stokers, with a super-heater and an economiser, and a complete installation for exhausting flue gases. Watermeters, Distance Thermometers, and Registering Instruments (to tell the composition of the flue gases), will serve to control the working of the boilers. One electrically-driven feed pump and one turbine-driven feed pump will supply the feed water to the boilers, while a special evaporating plant will be used to make the necessary feed water by distillation from the Whangpoo river water. This evaporating plant will use exhaust steam from a small house turbine for evaporation of the necessary water.

The Generating Plant will consist of two Skoda-Type highly economical steam turbines, built with two casings —one for high and the other for low pressure. The steam pressure at the inlet valves of the turbines will be 500 pounds per square inch and the temperature 750 degrees (Fahr.) One generator will be coupled directly with each turbine. Each turbo-generator set will run at 3,000 revolutions per minute, and will have a normal out-put of 12,500 kva., or 10,000 kw. at 80 per cent. power factor, generating three-phased current at 6,600 v and 50 cycles. The permissible over-load of each turbo-generator set will be 25 per cent., and each set will be able, in time of peak-loads, to supply 12,500 kw. Each generator will be equipped with a special circulating air cooler, which, using the same air all the time, prevents dust from being taken into the generator as happens with air coolers of other types. The steam consumption of the turbine at full load amounts to rd. 9.0 pounds of steam per kilowatt hour, generated, when the condenser cooling water is of 82 degrees (Fahr.) Each turbine will have its own condensing plant with all the necessary auxiliary parts, including motor driven cooling water pumps.

The electrically actioned, travelling cranes will be installed in the Generating Plant, one with a capacity of 40 tons, and the other with a capacity of ten tons.

A special house-turbine set of 500 kw. output will be installed to supply the electricity necessary for the station itself, so that the circuits inside the power station will be absolutely independent of those outside the station. Two house-transformers will make it possible to join the whole of the inside circuits to the main busbars.

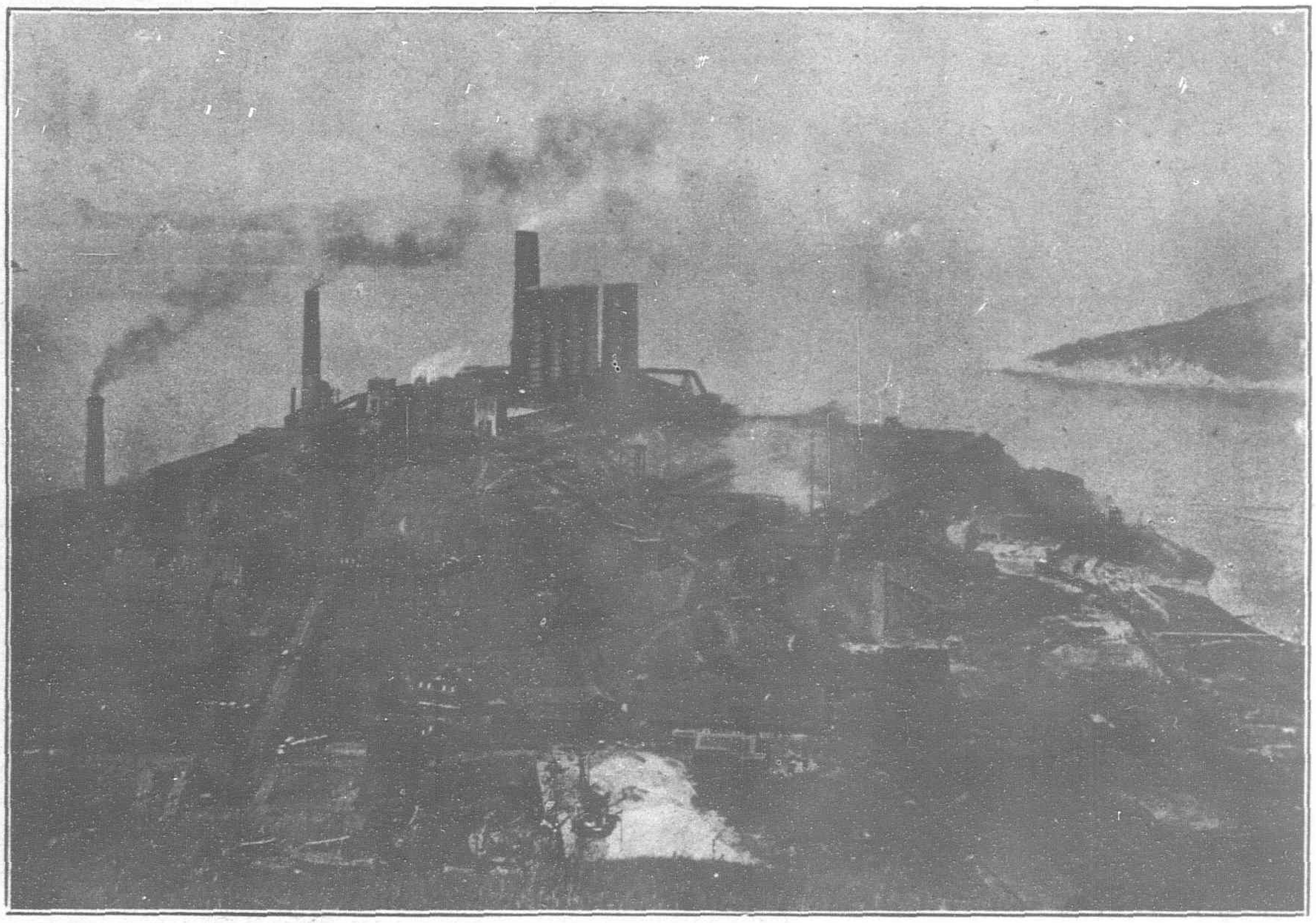
The current generated at 6,300 volts will be collected by a set of busbars from which feeders will run to the various nearby places of consumption, while two transformers, each of 12,500 kva. capacity, will supply another set of busbars with current at 33,000 volts, at which pressure the long distance supply lines will be fed.

A special direct current generator set, together with a storage battery, will supply the direct current necessary for the operation of the remote control

(Continued on page 269).

Copper Production*

One of the Oldest Known Industries in Japan, Brought to Highest Order on Modern System



The Sumitomo Besshi Copper Mine: Shisakajima Smelter

THE copper manufacturing industry in Japan has been almost monopolized by a few rich men in this country, that is to say, the Kuhara Family has so far managed the Hidachi Copper Mines, the Sumitomo Family, the Besshi Copper Mines, the Furukawa Family, the Ashio Copper Mines, the Fujita Family, the Kosaka Copper Mines, and the Iwasaki Family, the Okozawa Copper Mines.

These copper mines have naturally constituted the central power in the copper manufacturing industry in Japan, more than 60 per cent. of Japan's total copper output having so far been represented by their products.

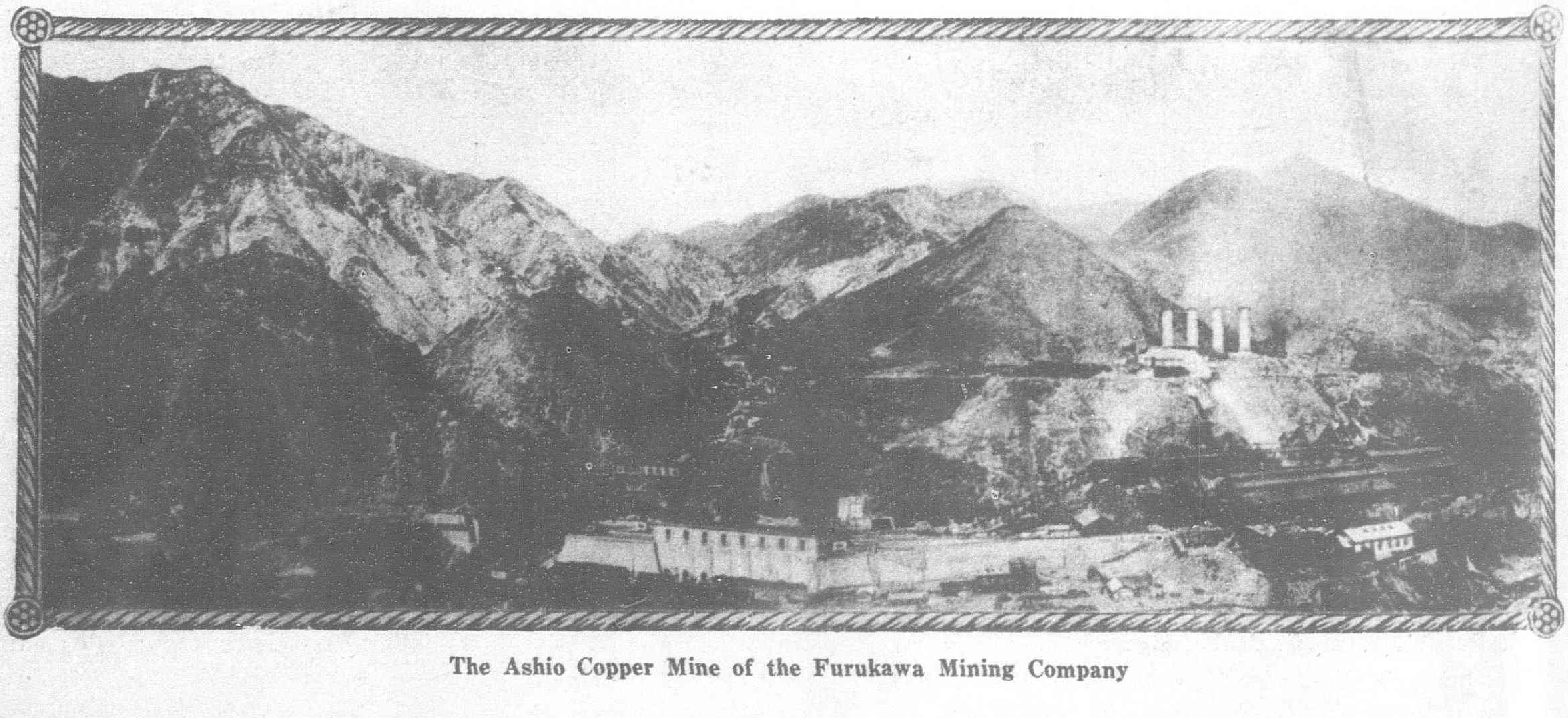
Prior to the outbreak of the Great European War, Japan was a copper exporting country, standing next to the United States in the amount of its copper exports, but on account of the business inactivity after the armistice and subsequent closure of some copper mines, Japan has since had to import copper from foreign countries.

Boom During War

Japan's copper industry, however, enjoyed its boom during the Great European War, as the price of copper abruptly advanced, registering a record price the highest ever reached up until that time in the past, and the output naturally was rapidly increased. It goes without saying that the industry made remarkable improvement during that period.

The adverse turn of the situation following the declaration of the armistice has put the copper manufacturers in this country in financial difficulties, and, in addition, the copper producers have had to withhold their output in view of the decreased demand from overseas as well as from the domestic markets.

The simultaneous curtailment of the operation of these Japanese



The Ashio Copper Mine of the Furukawa Mining Company copper mines has caused a shortage in the supply of copper in this country and the domestic consumers have thus had to import copper from foreign countries.

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*" Japan To-day and To-morrow."

Reasons for Reduction

The cessation of operation of these copper mines is attributed to the following two major reasons:

1.—The cost of operation could not be met because of the slump in the price of copper which was world-wide while the manufacturing cost, including the wages of miners, advanced abruptly. The existing copper mines had an alternative choice, that of reducing their production or of closing their works.

2.—The recent activity of the hydro-electric power business in Japan has made a rapid increase in the demand for copper and these hydro-electric power companies have natually begun to import American copper, which is much lower in price than the home production.

Particulars of the copper production in Japan and her exports and imports during the past 13 years since the outbreak of the Great European War are shown in the following table:

Years	Home production	Imports	Exports
	(Unit Ton)		
1914	78,704	—	43,305
1915	83,017	324	56,528
1916	111,562	2,325	57,528
1917	122,384	14,081	71,395
1918	95,455	1,068	31,553
1919	81,865	27,570	19,132
1920	37,464	22,540	5,156
1921	52,522	12,891	9,023
1922	53,780	22,167	410
1923	59,432	6,038	360
1924	61,534	6,090	324
1925	63,513	3,138	266
1926	63,375	13,910	134

Output Falls

The production of copper in Japan has decreased since 1918, as shown in the foregoing table, the 1920's output even falling to one-third of that in 1917. The advance of the manufacturing cost and the world-wide slump of the price of copper have thus made it necessary for the small copper mines to stop their operations for some time.

Because of the inactivity of the copper manufacturing industry in Japan, the Government, in 1922, created the high protective tariff, raising the import duty on copper from Y.1.50 to Y.7 per 100 kin, in order to encourage the copper producers in this country.

The Government's protection was somewhat effective, as the copper imports in 1923 decreased to 6,038 tons or one-third of the previous year's imports, and the domestic production also increased markedly. However, the exportation of the home products was as yet inactive.

Although the copper producers in this country were relieved of foreign competition as the result of the application of the protective tariff, their prospects for the future were not bright and, therefore, they have started producing copper-materials in order to recover their former business activity.

Copper Materials

These Japanese copper mining companies have taken up the refining and manufacturing business and each has established a separate company for the purpose. Copper wires, plates and sheets, rods, pipes, electric tools, etc. have been manufactured in large quantities since by these companies.

For instance, the Kuhara Mining Company has established the Hidachi Copper Works, the Sumitomo, the Sumitomo Copper Works, the Furukawa, the Fuji Electric Apparatus Company in conjunction with the Siemens (?) Electric Apparatus Company, of Germany, and the Fujita, the Kosaka Copper Mines and Works.

Business Results

Particulars of the business results of the Kuhara Mining Company during the past 10 years, which represent the general copper business in Japan, are shown in the following table:

Years	Authorized capital	Paid-up capital	Profit	Dividend (Unit per cent)
	(Unit Y.1,000)			
1917, 1st half ..	30,000	30,000	5,765	35
1918, ,, ,, ..	75,000	41,250	13,179	20
1919, ,, ,, ..	75,000	41,250	3,450	12
1920, ,, ,, ..	75,000	41,250	1,114	8
1921, ,, ,, ..	75,000	41,250	129	—
1922, ,, ,, ..	75,000	41,250	1,028	—
1926, ,, ,, ..	75,000	41,250	1,615	7
,, 2nd ,, ..	75,000	41,250	1,609	7
1927, 1st ,, ..	75,000	41,250	1,295	7

The Kuhara Mining Company, as shown in the foregoing table. had been unable to pay any dividends for five years beginning 1920 on account of its business inactivity, but resumed paying dividends, though the percentage was small, in the first half of 1925 following the slight recovery of the business.

New Waterworks and Electricity Plant in Chapei

(Continued from page 267).

of the high tension switches, and for emergency lighting. The high tension switching plant will be placed in another building, separated from the Generating Plant.

The whole Chapei electric power station will be designed according to the most recent experience in similar power plants in Europe, and will, when completed, be able to serve as a good example of a modern power plant working with highest economy.

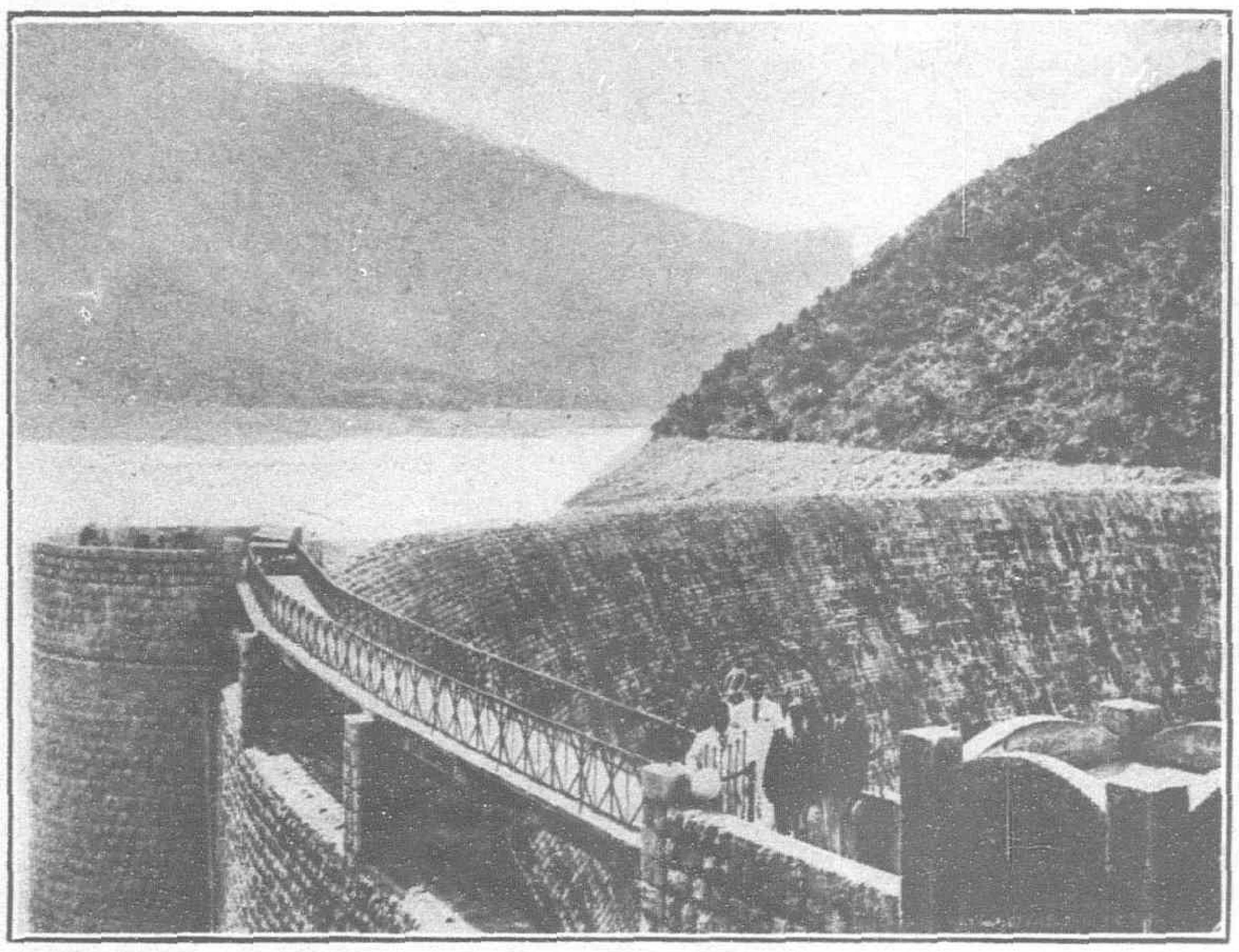
Transformer House

Early in February the contract for the supply of the machinery was signed by the Chapei Electricity and Waterworks Company with the Skodaworks. Since 20 months were given the latter in which to erect the complete plant, sometime in the latter half of 1929 the plant should see completion.

Civil Engineering in Korea

Roads

IN old Korea with all its own civilization good roads were entirely lacking, and what roads it did possess were usually left in a state of utter disrepair. Even the ancient " grand highway " from Keijo to the Chinese border was barely grand enough to admit of a cart being driven along it, so what the rest were like can easily be imagined. It is true the Korean Government used to allot certain sums of money to the various districts for purposes of road repair, but much of this, it is said, went into the pockets of the local magistrates, and practically nothing was done to the roads. On the country being brought under Japanese management, great efforts were consequently put forth to improve this backward condition, and it was planned to construct a regular network of roads of three classes, of which the first and second classes were to be looked after by the Government itself, and the third by the provinces, while in urban districts all classes were to be under municipal control.



Modern Irrigation Reservoir in North Zenra

When repairs were undertaken in former times, corvée or compulsory service was always called into play, and this usage was continued even into the new régime by conscripting those persons unable to pay their assessment. In addition, the landed gentry were often induced to surrender land for roads free of cost. But this is now changed, for in 1919 it was prescribed that in the making of roads at national expense corvée should be dispensed with, and the land needed purchased at a fair price, though in the case of roads at provincial cost the old practice was still retained in force in consideration of its special connection with local interests.

During the four years of the protectorate some Y.3,900,000 raised by industrial loans and from other sources were appropriated for betterment of roads aggregating some 500 miles in length, but the work done was only piecemeal, and taking the country as a whole, good roads were still so lacking that travelling and transportation were made with difficulty on foot or on horseback along narrow, deep-rutted, and meandering tracks.

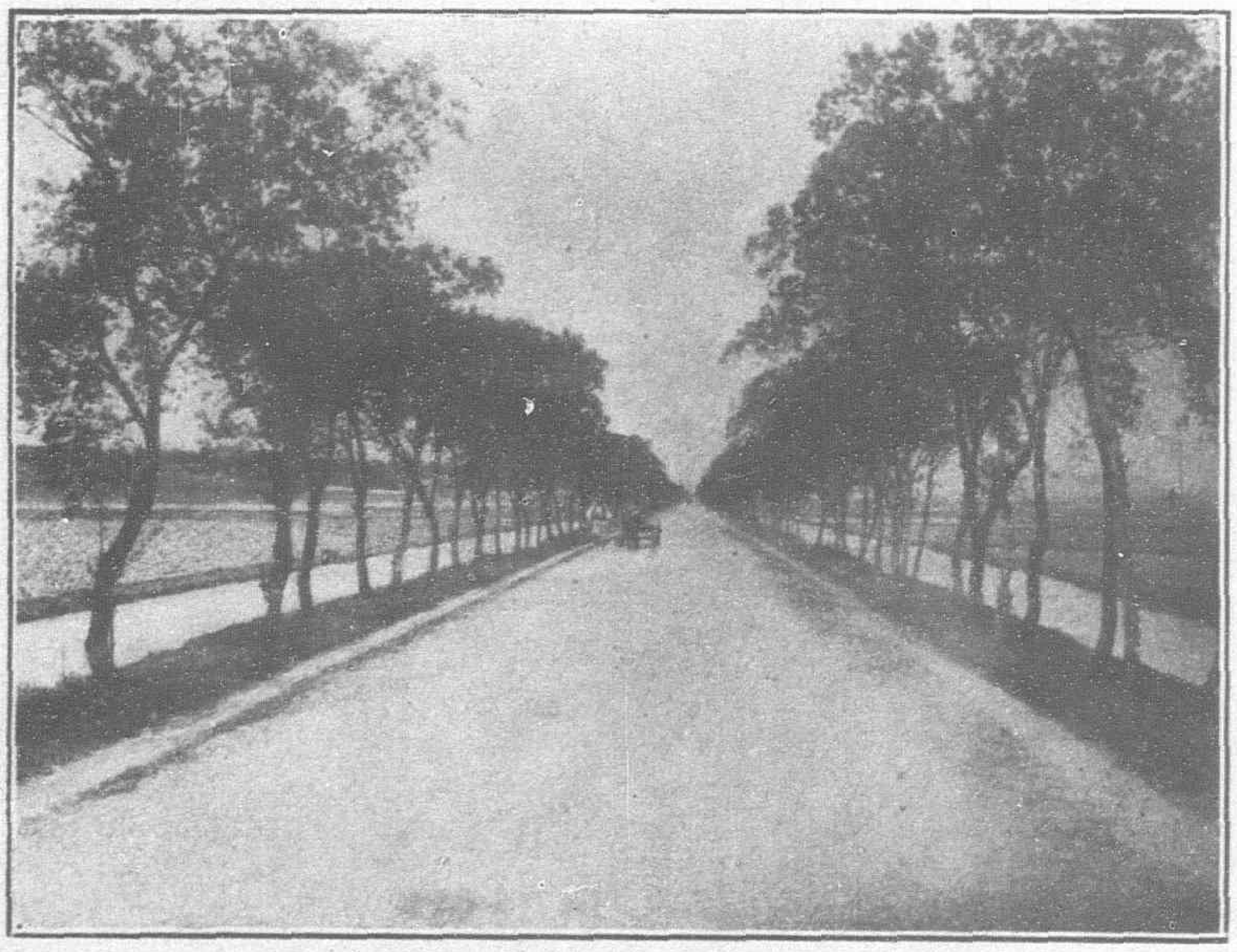
To overcome this obstacle to progress the Government ruled that first class roads were to be 24 feet or more in width, second class 18, and third class 12, and then set about the construction of roads in a systematic manner. Execution of the first program took seven years and saw its completion at a cost of Y.10,000,000. It comprised 34 highways measuring 1,700 miles, and the building of an iron bridge over the Kan-ko. For the second program the construction of 26 highways, some 1,200 miles in length was projected at an estimate of Y.7,500,000 spread over six years, from 1917 to 1922. Owing to the rise in price of material and labor, the work was but half done in the period set, so to allow of its completion the original estimates were doubled, and futher augmented by the inclusion of an additional sum of over Y.10,000,000 for frontier roads and bridges, the period of construction being extended by another six years.

Besides directly engaging in the work the Government annually subsidized the provinces in making roads of local importance, and by the year 1920 had expended over two million yen for the purpose, but from that year ceased rendering such aid because the provinces found it possible to carry on without it.

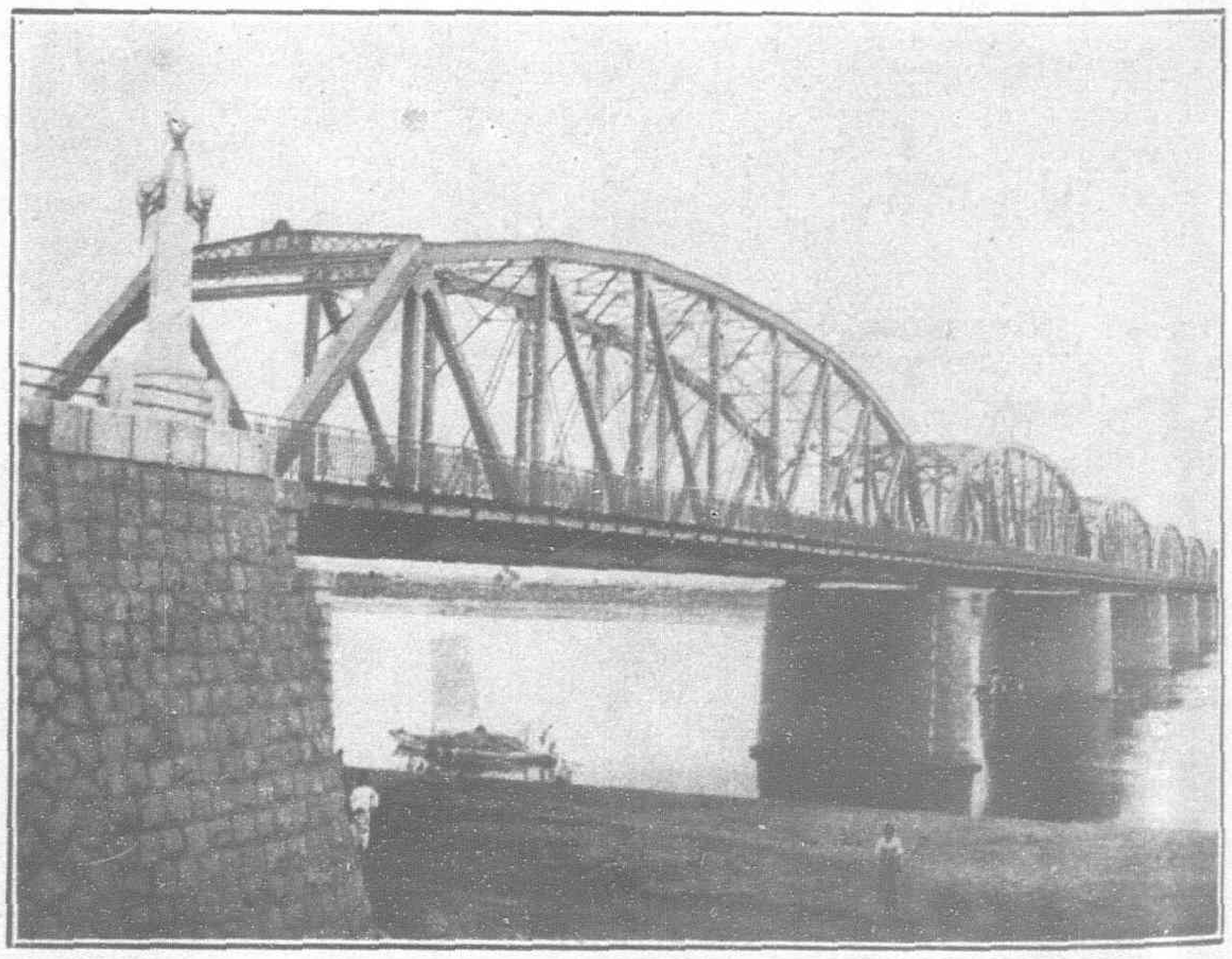
According to the latest returns the length of roads already constructed is over 5,000 miles of first and second class roads and over 4,500 miles of third class roads, or 67 and 64 per cent. of the lengths determined in the projected network, while roads traversed by public automobiles measure over 6,000 miles. Thus it will be seen that great improvement has been effected in traffic facilities throughout the peninsula.

Street Improvement

The miserable state in which most Korean towns were before the Japanese authorities took in hand the improvement or recon-



Improved Road between Zenshu and Kunsan



New Bridge over the Daido, Heijo

struction of their streets was simply beyond description and Keijo the capital, was no exception. Since the advent of present régime street-reconstruction has been extensively carried out in many places, especially in Keijo, where it was first conducted at national expense to set an example to other towns, and the streets selected in it for improvement were completed at a cost of Y.3,000,000 from 1911 to 1918, thus giving quite a modern aspect to the city. The second program from 1919, estimated to cost Y.3,400,000, is steadily being pursued.

For the sound development of any town nothing is more essential than street improvement, so the Government has incorporated in the budgets since 1921 a special item for investigation regarding town-planning. There are now 13 towns marked out for work, including the principal seaports and provincial centers. The expenditure on these is defrayed out of the local revenues with some assistance from the national treasury, and work in each is actively going on, the period set for it being from four to seven years.

Harbor Improvement

Harbor improvement was first undertaken in 11 important ports during the protectorate at an estimated cost of Y.4,000,000. While work was still going on, annexation took place, in consequence of which all these works were taken over by the present Government and vigorously pursued on a far bigger scale.

The scheme for Fusan was to construct two iron piers, amplify the landing-place, and dredge the harbor. Pier No. 1 was made to accommodate at one time two steamers of 4,000 tons each on one side of it and on the other it was directly connected with an extension of the railway station. Pier No. 2, running parallel with No. 1, was made much longer, enabling it to moor four steamers of 20,000 tons at the same time, two on each side, and was equipped with three railway tracks on which light engines for haulage are employed. Besides, longshore sheds were built, and the harbor mouth was deepened. The work was completed in 1918 at the cost of Y.3,940,000.

These arrangements were all based on a maximum capacity of 700,000 tons a year, but trade through the port showing every sign of greater prosperity, the Government drafted a second program comprising enlargement of the jetties, construction of a breakwater, and dredging of the harbor to provide more spacious anchorage. This plan was scheduled to be accomplished in six year from 1919 at an estimate of Y.9,172,000.

The works at Jinsen were undertaken to provide it with a lock-gate dock with gate similar in form to that on the Panama Canal. It can accommodate with ease three steamers of the 4,500 ton class along one side of it, the other side being used by freighters and lighter craft. To shelter the harbor and facilitate the entrance and exit of ships, and for the convenience of those vessels anchoring outside the dock, it was planned to construct a jetty between the town and Getsubito, an island, and a long training wall running south-west of Sha-to, while sheds and tracks were also to be provided. The work was started in 1911 at an estimate of over Y.7,000,000 and was completed in 1922.

The works at Chinnampo were begun as a four-year undertaking in 1911, and finished as planned in 1914 at a cost ofo ver Y.530,000. The principal work was the building of a quay wall so equipped as to be able to accommodate two steamers of under 3,000 tons at a time, but the maximum difference of 24 feet between ebb and flow being still a source of trouble in unloading, the authorities are now studying how to cope with this difficulty that the future development of the port may be ensured.

The works at Gensan were started as a seven-year enterprise from 1915 at an estimate of Y.2,640,000. The major part of the program was the building of a new quay wall capable of mooring two steamers of 3,000 tons at one time, the construction of a long breakwater, and further dredging of the anchorage. All is now finished with the exception of some part of the land equipments, and on the enlargement of these it was decided in 1922 to spend an additional Y.850,000.

The larger harbors being thus improved, the next to claim attention was Seishin, as destined to play an important part in the development of North Chosen. Necessary investigations being almost finished, actual work was started in 1922 as an eight-year enterprise at an estimated cost of Y.2,500,000.

River Improvement

The large rivers in Chosen, such as the Oryoku, Daido, Kan, Kin, and Rakuto, are of great value to traffic though they have not yet been utilized to their fullest extent. On the other hand, their inundation, an almost yearly event, results in more or less damage being done to the land traversed by them, mainly because little has ever been done to keep them within proper bounds, and also because the precious forests at one time bordering them have been cut down regardless of resultant evils. On the establishment of the present régime, therefore, serious attention was paid to the matter of river conservation, and all immediate steps possible in existing circumstance were taken toward this end, while fundamental investigation was started of eleven selected rivers as a preliminary to a permanent riparian undertaking, and this preparatory work is now all but completed.

Waterworks

Owing to the nature of the soil Korean water is generally very hard, and even the well-water is found in many cases not good enough for drinking purposes. Moreover, it not seldom happened that the natural supply of water ran short, especially in the large towns, thus menacing the people with much danger to health. To remedy these inconveniences the authorities have continuously encouraged the construction of modern waterworks wherever possible.

The only cities possessed of waterworks in pre-annexation days were Keijo and three others, but now no town of importance lacks such provision, and the number of towns so provided has risen to 26. In the establishment and operation of them both Government and local public bodies took part, but in March, 1922, the Government transferred the waterworks run by it to their respective municipalities, though in the case of new construction financial help is still given by it in proportion to the need, and the subsidies so far granted amount to some Y.3,500,000, representing about 50 per cent. of the total cost of new construction.

Public Buildings

At first most of the public offices in the country were housed in old native buildings, but these being found far from convenient for the conduct of business, the Government annually spent two to three million yen in reconstructing them or in replacing them by new buildings, and after the year 1920 the budget estimates for building were more than doubled owing to expansion in the varions public untertakings, including the erection of new Government-General offices and the Chosen Shrine.

The present buildings of the central government in Keijo are those of the former Residency-General somewhat enlarged, so after careful study a site for a permanent home was selected in the grounds of Keifuku or North Palace, and it was decided to erect on it a large five-storey building in modern Renaissance style. The work was started in 1916 as a ten-years enterprise at an estimate of Y.3,000,000, but the high cost of material and labor has already necessitated the expenditure of an amount double the original estimate.

For the erection of a grand shrine in Chosen as the center for national ceremonies, a site was selected on Nan-san or South Hill, Keijo, commanding a fine view of the country around. The work was begun with a ceremonial purification of the site in May, 1920, at an estimated expenditure of Y.1,500,000, and is in a fair way to being completed as arranged in the year 1925.

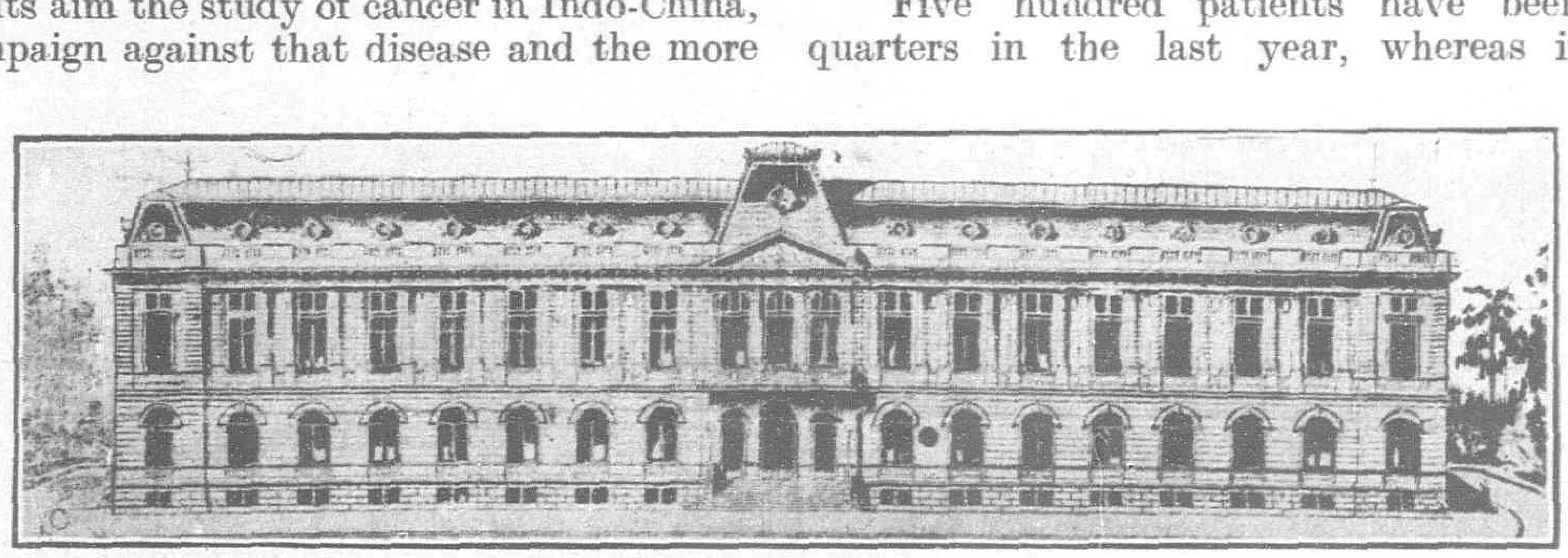
Nosei Denryoku K.K. (Nosei Electric Power Co., Ltd.)—The Kimbara Hydro-Electric Power Station now under construction will be completed some time about Airl next year. The construction of a 77,000 volt transmission line between this station and Tsu City, in Miye Prefecture, a distance of about 68 miles, will be started in the near future. On completion of this transmission line the Miye Godo Denki will stop the operation of its steam power plant in Tsu City (Report not confirmed)

A New Hospital for Indo-China

As a phase of the economic development of the Far East, where modern methods of caring for employes as well as in the actual operation of industry have been brought to a high pitch of efficiency ; as a phase, too, of the gradual infiltration of Western science into the Orient, and as a corollary to the American-endowed Rockefeller Institute of Peking, and anti-leprosy drive in the Philippines, comes the announcement of the building of the new hospital known as the Radium Institute at Hanoi, an outgrowth of a society once known as the "Institut Curie," the main building of which, now in process of construction, will be completed within a few months, after a campaign of nearly five years to raise the necessary capital.

The new hospital, under the administration of the Protectorate of Tonking, represents a contribution from all the provinces of Indo-China, excepting only the colony of Cochin-China. The Protectorates of Annam, Cambodia and Tonking all have helped to raise the $106,745 that is being put into the new building, the latter Protectorate having furnished the site, at the corner of Avenue Borgnis Desbordes and Rue Richaud in Hanoi.

Principally to serve the native population of Indo-China, this Radium Institute has for its aim the study of cancer in Indo-China, the organization of a campaign against that disease and the more prevalent eye diseases and the treatment of the sick of all classes by modern surgical science. We have emphasized the economic effect of the new institution because it is by the treatment of these diseases that a large class of those afflicted and invalided by them will be available for work on the plantations and in the industrial plants of Indo-China, where there is a demand for labor.



The Radium Institute of Hanoi

As an example of the work that will be done on a large scale by the hospital when it is completed, the Institute already has commenced to function using one wing of the Native Hospital belonging to the Protectorate. Here at more than an experimental stage, patients already are being treated and much of the equipment that will later go into the main hospital building has been installed in these temporary quarters.

The room for X-ray, for example, contains not only the usual material such as the revolving switch Gaiffe and Coolidge tubes with variable penetration but also an apparatus of deep X-ray therapy of the Gaiffe type, with an oil tube contrivance for protection. This equipment is completed by a constant tension plant of 250,000 volts. Working in such a warm and damp climate as that of Tonkin, where the humidity reaches often between 95 and 98 per cent. of saturation, requires a delicate and special adjustment of the apparatus.

Supplementing this X-ray apparatus is a radium treatment service with a capacity of 437 milligrams of radium divided in the following manner : 34 vials of 0 cgr. 01, 34 vials of 0 cgr.02, 33 tubes of 0 cgr.05, and 17 tubes of 0 cgr. 10. Included also are all the necessary materials for filtration.

The hospital laboratory is of sufficient scope for all the microscopical examinations indispensable to diagnosis and treatment of disease.

A large electrical installation of the latest model, belonging to the hospital, has already been put into operation, to permit of radioscopy, radiography and radiotherapy under the best conditions, as well as various other electrical treatments. The radiographic and radioscopic apparatus, as well as the X-ray, are all up-to-date and allow of the quickest possible service.

The method employed here in the treatment of cancer varies. Either a moulding is made of the growth in war in which are placed from 8 to 10 platinum tubes, each containing a milligram of radium, as the mould is fitted over the growth or a number of vials, usually five or six, of the same metal, are driven into the tumor. The treatment lasts from ten to twenty days and the effects, demonstrated by photographs comparing the diseased part before and after treatment, show remarkable results.

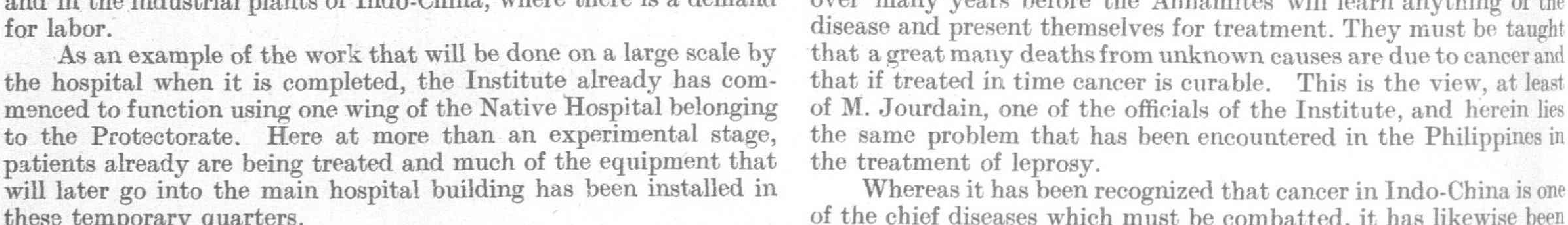
Under the present facilities, there are two wards, each with fifteen beds and two compartments for treatment. As an interesting commentary on the primitive Annamite, the windows of the wards are all barred to prevent any of the patients leaving with half a dozen tubes in their bodies. The precaution against losing these tubes, each worth 4,000 Francs, is without precedent.

Five hundred patients have been treated in these small quarters in the last year, whereas in 1925-26, the second year of the working of the Institute, only 143 patients were treated, six of whom were Europeans. The new hospital will accommodate between 1,000 and 2,000 patients a year, and eventually will mean a great saving in manpower in Indo-China, although it will require an educational campaign extending over many years before the Annamites will learn anything of the disease and present themselves for treatment. They must be taught that a great many deaths from unknown causes are due to cancer and that if treated in time cancer is curable. This is the view, at least of M. Jourdain, one of the officials of the Institute, and herein lies the same problem that has been encountered in the Philippines in the treatment of leprosy.

Whereas it has been recognized that cancer in Indo-China is one of the chief diseases which must be combatted, it has likewise been realized that it is of less importance to prolong by ten years the life of a cancer patient who already is 40 or 50 years old, than to prevent from blindness a hundred victims of purulent ophthalmia.

To progress in the treatment of this wide-spread malady, the founding of an Opthalmological Institution is anticipated. This would result in the more rapid employment of all available labor in the provinces. But so far the work of the present Institute is concentrated on cancer. The men on the scientific staff of the Institute are: Dr. Le Roy des Barres, director and chief surgeon, Dr. Coppin, assistant surgeon and former resident surgeon of Paris hospitals, Dr. Heymann, radio and curietherapeutic doctor, former assistant to Professor Bergonie, and Dr. Naudin, dissecter and formerly assistant to Professor Tribondeau. M. Lagisquet, Jr., is the architect for the building.

The Radium Institute is one of several hospitals in Hanoi, the others being the Lanessan Hospital, one at the Medical School, and the Pasteur Institute. It will complete a medical equipment for this city nearly the equal of any large center in the Orient, and is in every respect significant of the civilizing influences that are at work in the lesser-publicized parts of the East.

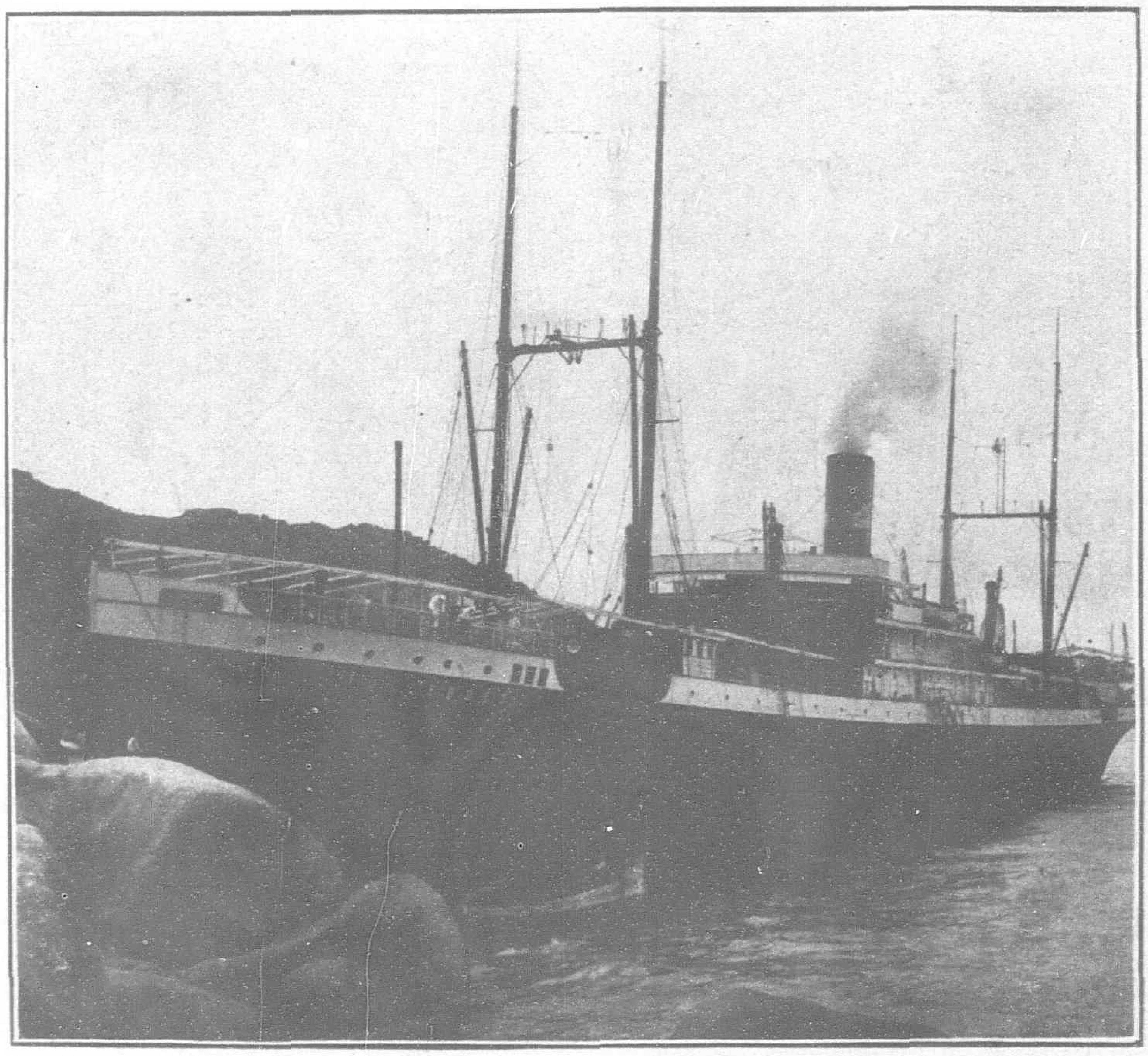


Plans of the Building

Remarkable Work at Taikoo Dockyard

S.S. "Tjileboet" – Salvage, Repairs and Building and Joining Up Near Fore End

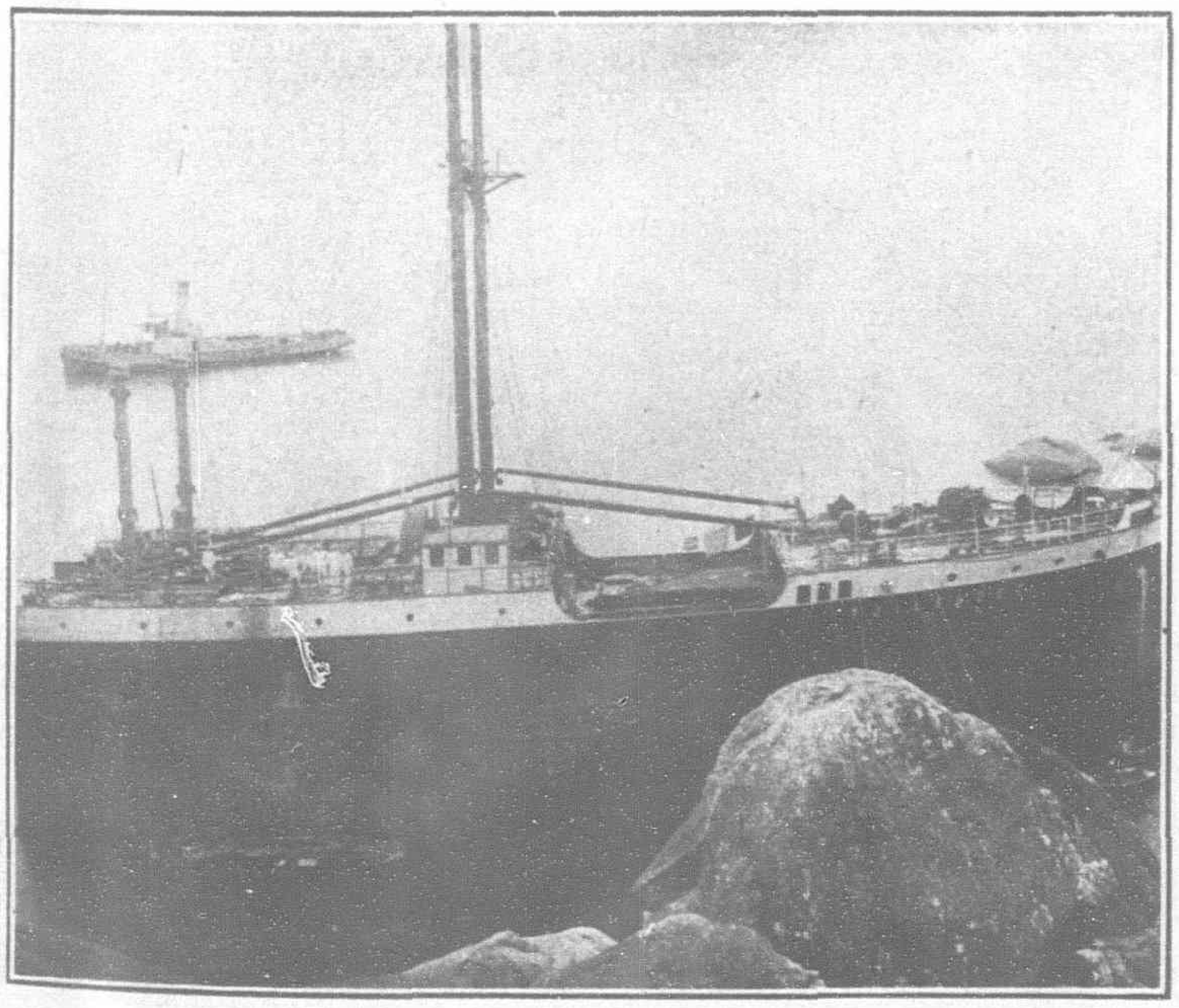
THE vessel sailed from Hongkong on the evening of April 5, 1927, and stranded the same night on the Island of Ling Ting, situated about 15 miles to the South West of Hongkong.



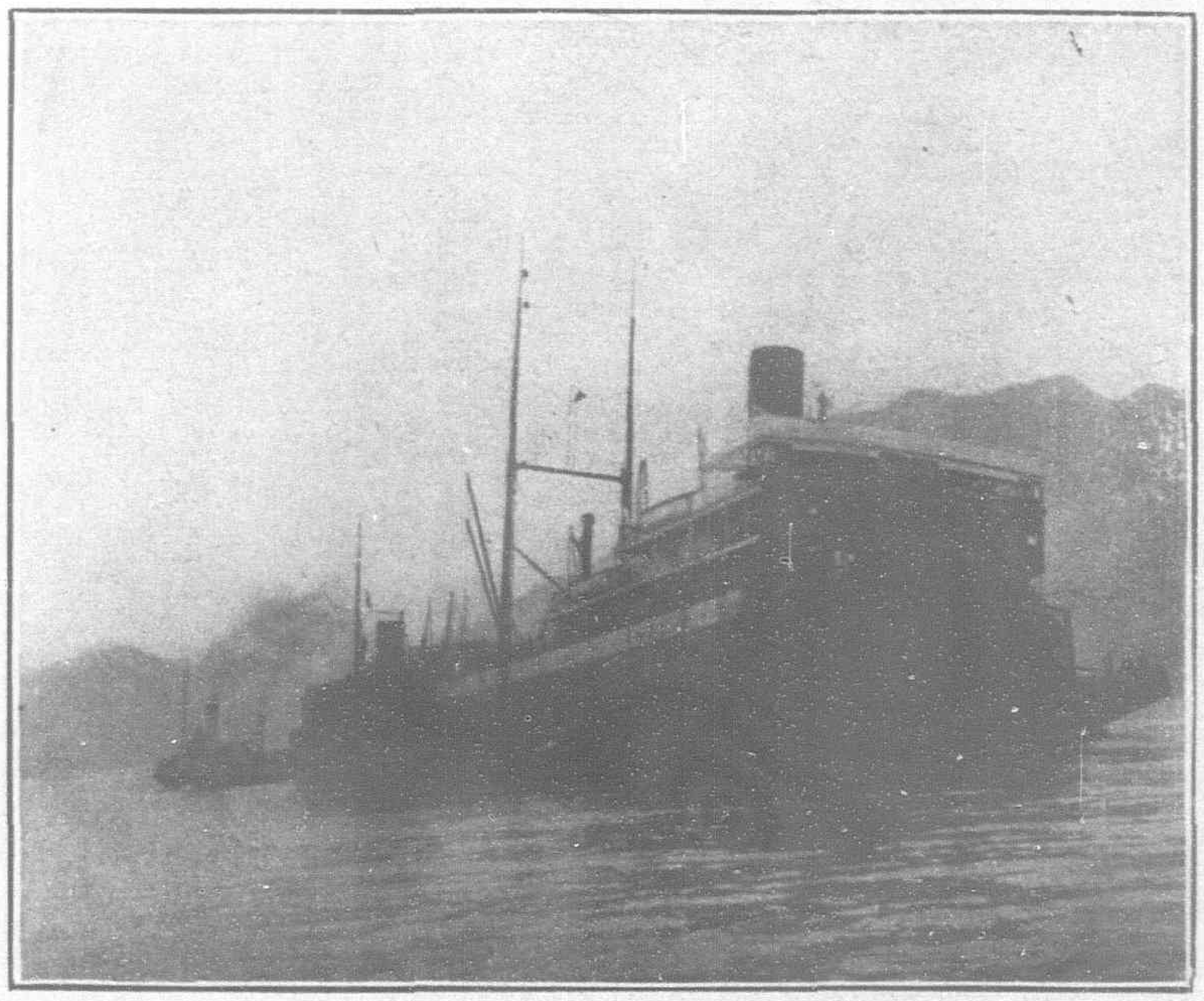
"Tjileboet" Ashore on Ling Ting Island, Taken on the First Calm Day After Stranding

In reply to S.O.S. messages, several of H. M. ships in Hongkong, the s.s. "Tjikarang" and the Taikoo Dockyard & Engineering Co's salvage vessel proceeded to the "Tjileboet" to render assistance. Owing to the heavy swell running it was only after some hours, by skillful handling, that the Taikoo vessel was able, with the assistance of officers and men of the Royal Navy, to take off all the passengers and transfer them on board H. M. ships and the "Tjikarang," and transported by them safely back to Hongkong. The "Tjileboet" was found to be jambed from the stem amongst a mass of rocks and boulders, and badly holed in Nos. 1 and 2 holds; she ran on shore at approximately high water and with the heavy swell continued to pound heavily causing extensive damage.

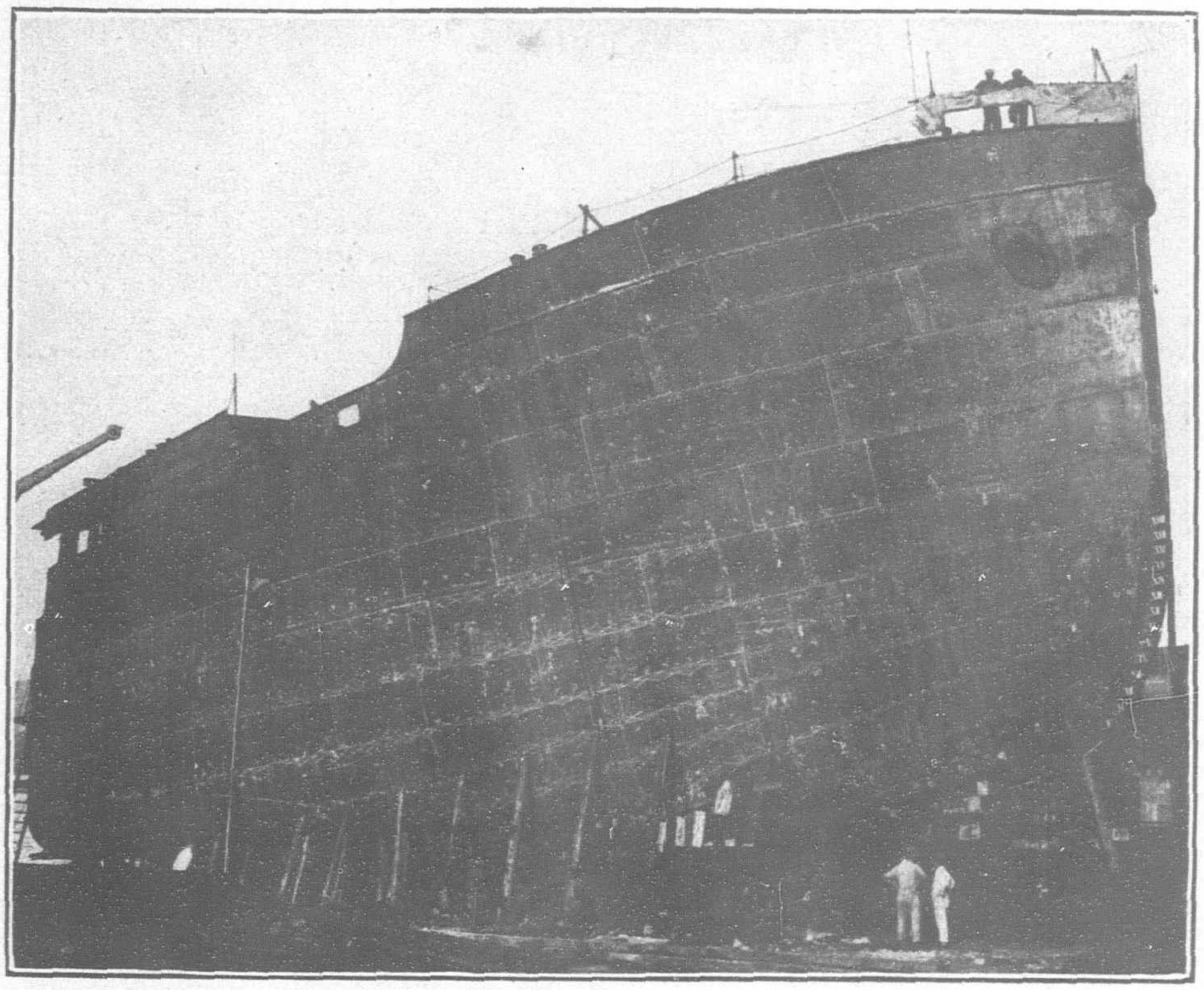
The difficult work of salvage was taken in hand by the Taikoo Dockyard & Engineering Co. who, working in conjunction with the Owners' representative and Lloyd's surveyor, had a diver's examination made as soon as weather conditions permitted, previous to which the salvage vessel "Taikoo," assisted by the tug "Wanchun," laid heavy anchors and hawsers to prevent, as far as possible, the elements driving the stern round and causing further damage. On the second day after stranding the weather moderated and patching and pumping No. 2 hold and cross bunker were proceeded with, while preparation was also made for putting ballast into the after hold, there being under and abaft of amidships ample water in which to tip and take vessel off after the fore part had been given sufficient buoyancy, and cut clear of the rocks. Work proceeded continuously, the No. 2 hold and cross bunker were patched and pumped out, while the tank top was heavily shored down and cutting away of plating and rocks was well in hand when the North East monsoon came away strongly and the vessel recommenced pounding heavily, stopping all work and doing further extensive damage; the No. 2 hold and bunker again filled and tank top and starboard bilge were broken.



Bow of Vessel Just After Stern Part was Cut Away and Salved



Stern Portion Under Tow Proceeding to Hongkong Harbour

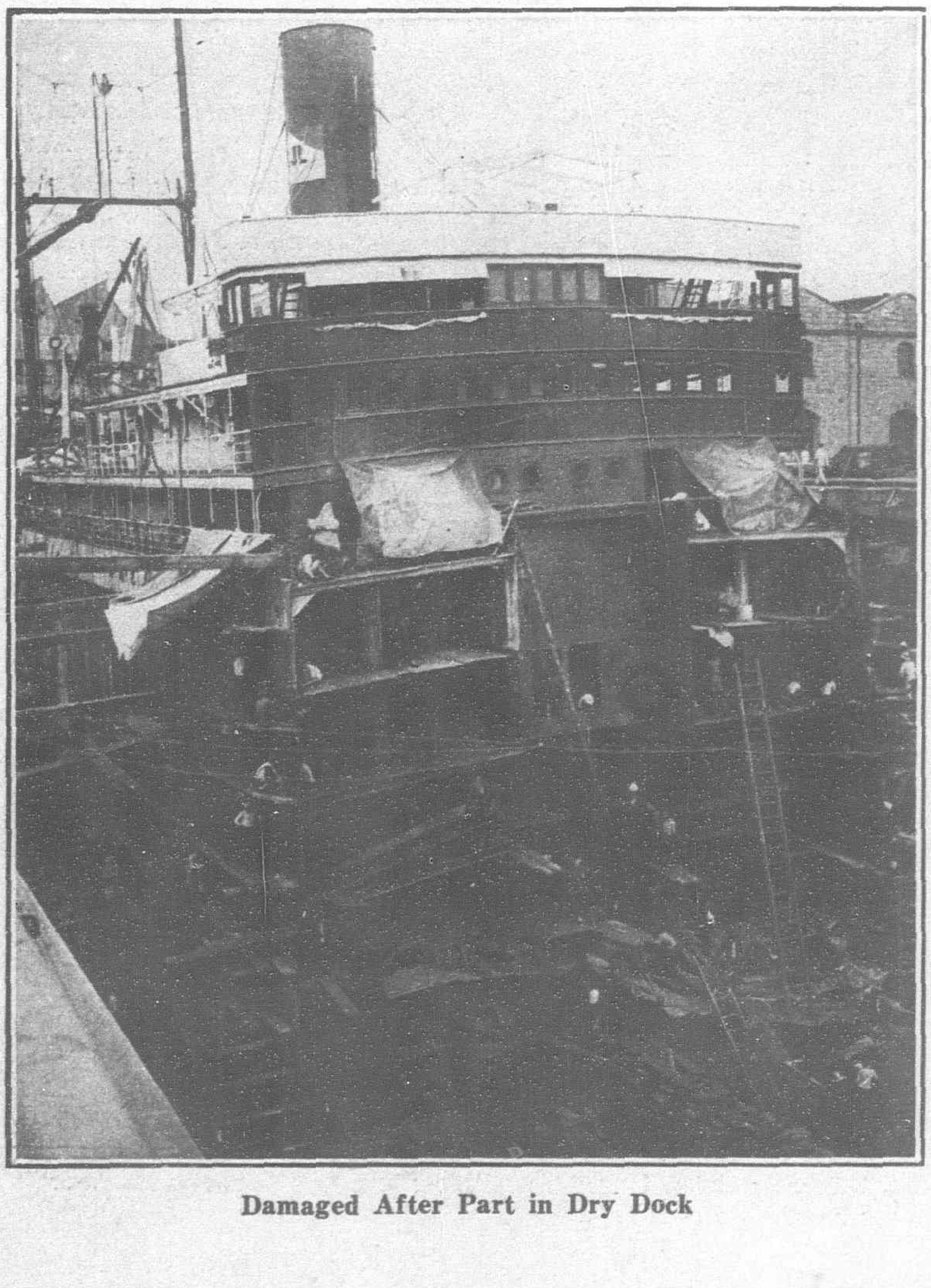


New Fore End on Building Berth Just Prior to Launching

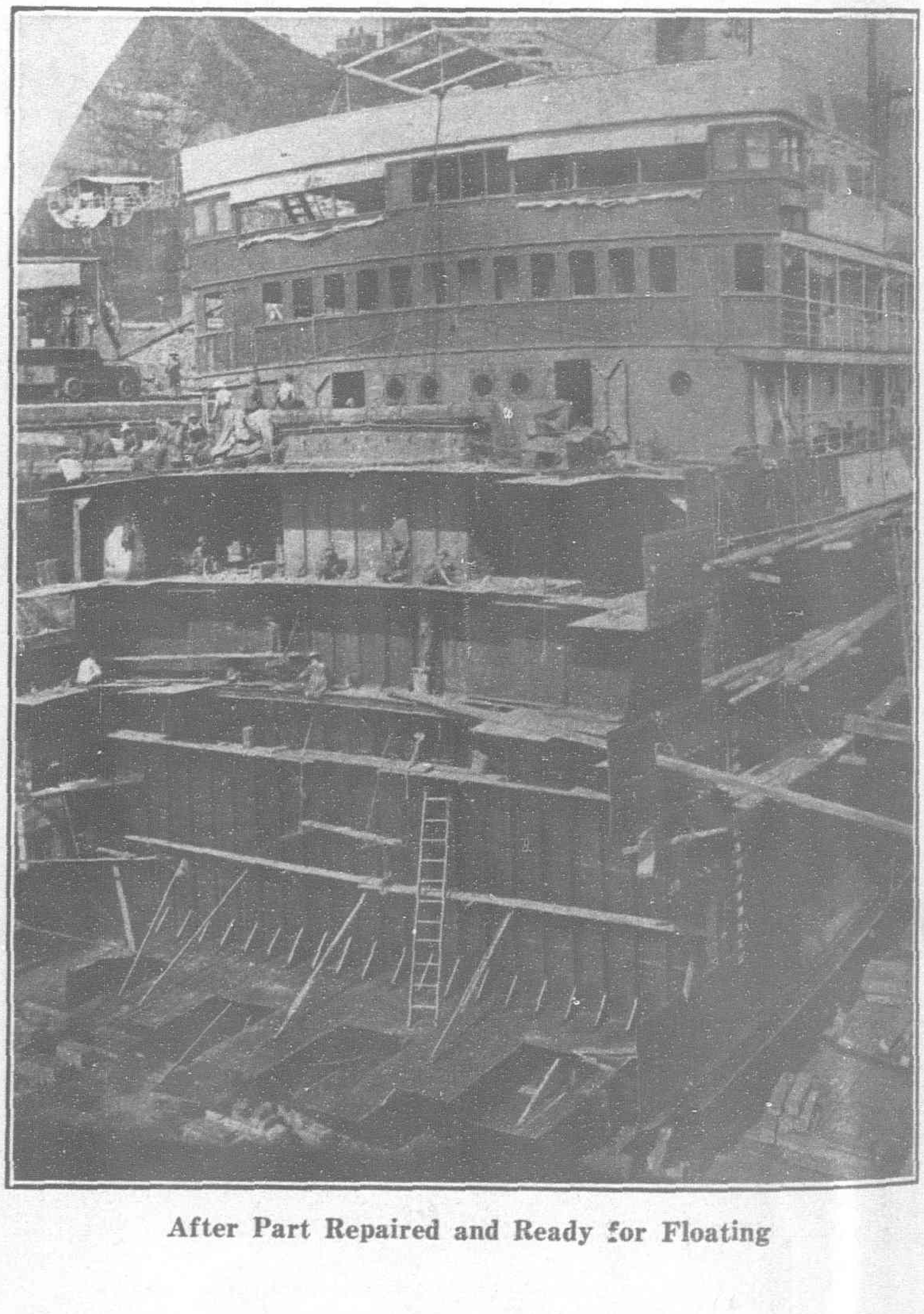
As soon as the weather again moderated, the work of repairing the damage and cutting away was resumed, however five days later very heavy weather was again experienced, and during this storm the vessel worked so much that it was feared she must become a complete wreck and the salvage party were compelled to leave her and take refuge on the rocks. During this storm much further damage was sustained to the fore part of the vessel, as well as to the stokehold bulkhead, which caused the engine room and boiler room to become filled, orlop deck was set up by the 12" shores from the tank top and the unfortunate vessel settled further down on the piercing rocks.

After this storm it was realized that the only hope was to cut the vessel through the fore cross bunker and endeavor to salve the after part together with the engines and boilers. The trim and stability calculations having been prepared by the Dockyard technical staff, vessel suitably ballasted, stokehold and engine room made tight and pumped out, oxy-acetylene cutting above water and dynamite blasting below was immediately commenced; and as cutting proceeded the hawsers were tightened up to hold vessel from swinging. When the cutting was completed the after portion floated clear without either tipping or dropping, and the vessel proceeded under tow of three powerful tugs to Hongkong where she was docked at Taikoo, and the damage under the engines and boilers, which was extensive cut away and repaired, after which the vessel was undocked and moored in the harbour to await the completion of the new forward part.

The steel material for the 140 feet of the new fore end having arrived from England, and all preparation being made, the new fore end of vessel was laid down in the shipyard. The building of the new end and also the launching, owing to its height and form, called for special consideration. The bow was duly launched, stern first and taken to dry dock with the after part, and after suitably ballasting, and carefully aligning the two parts, the joining section of 25 foot was built in and all work completed when the vessel was



Damaged After Part in Dry Dock

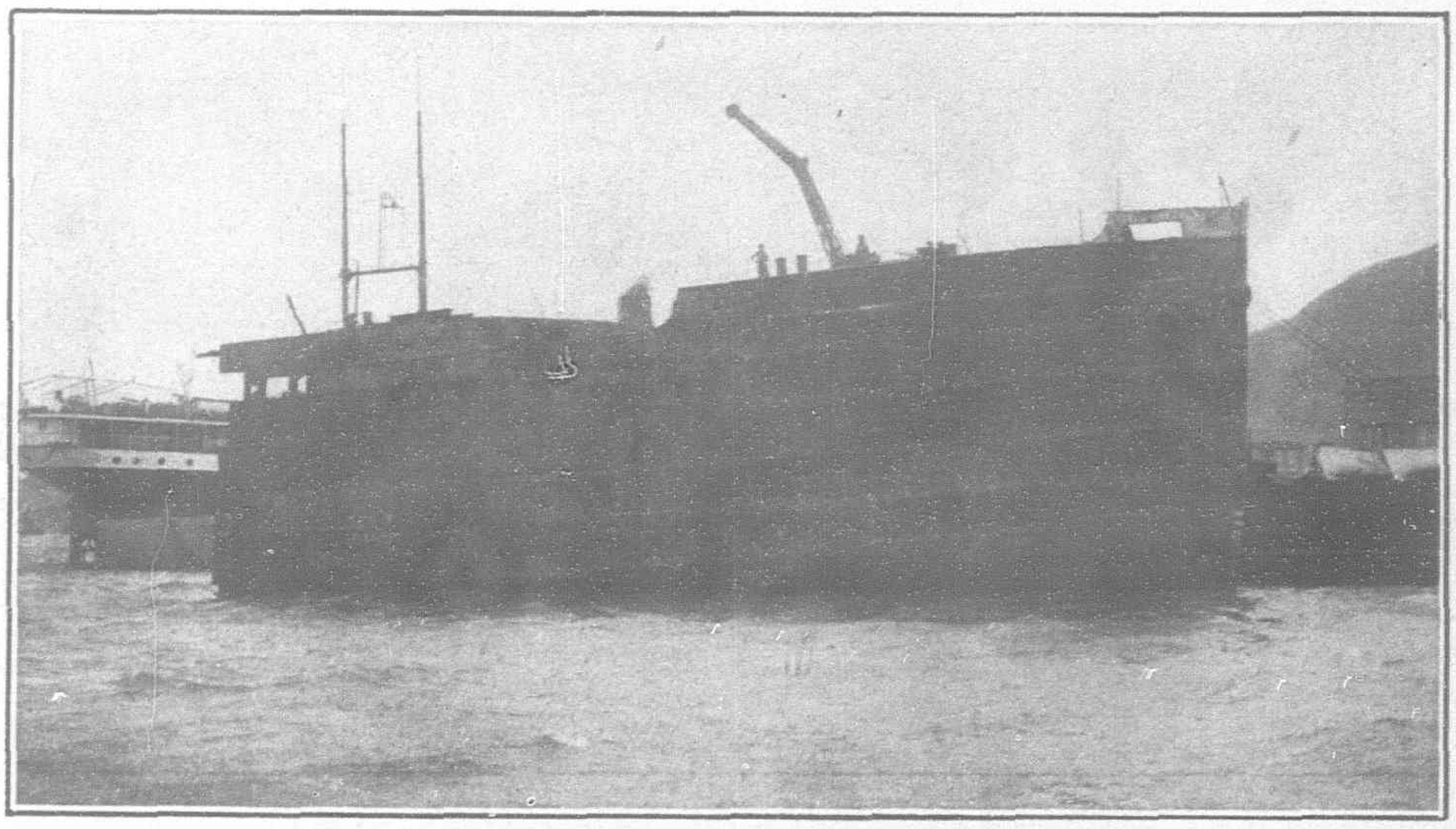


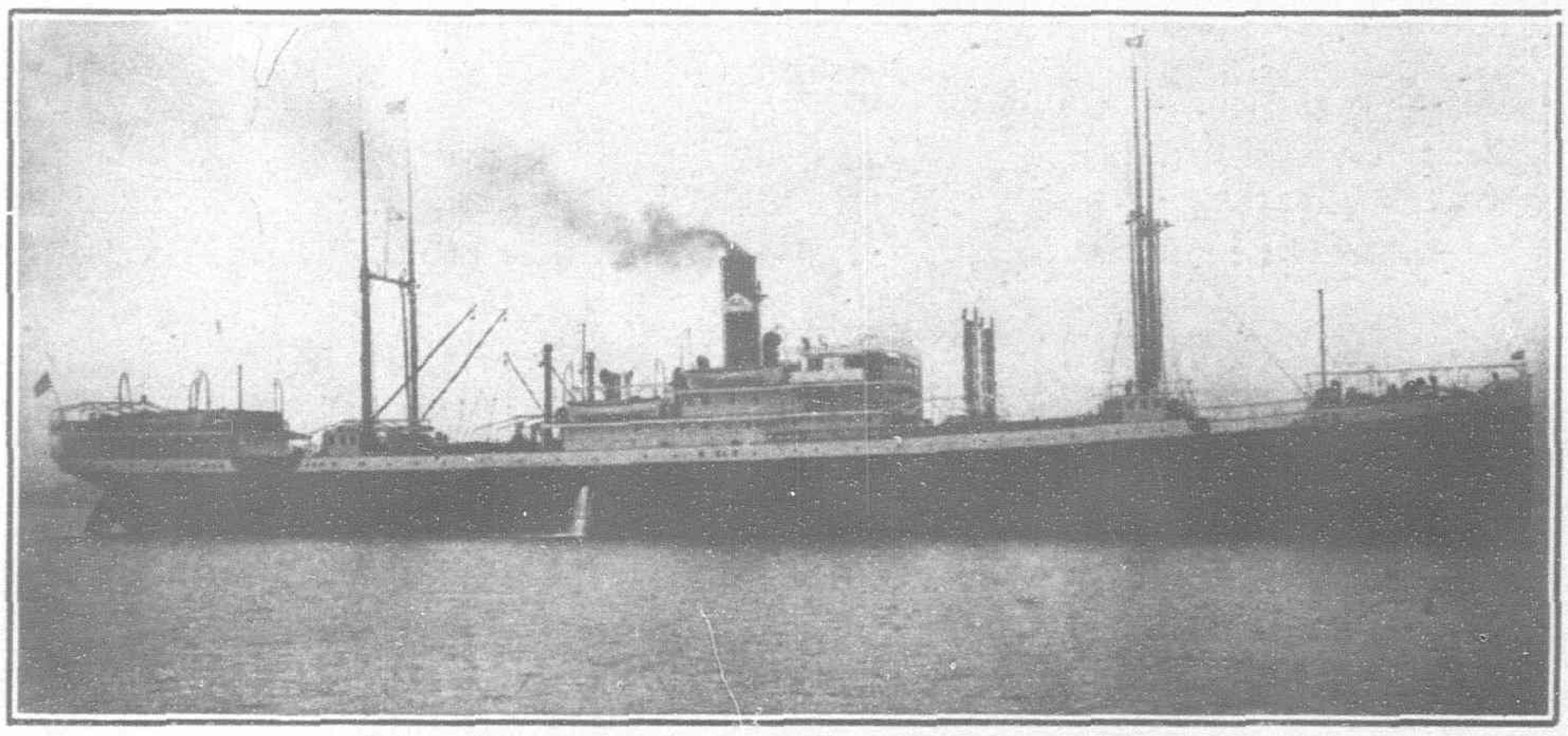
After Part Repaired and Ready for Floating re-classed 100-A. 1 Lloyd's, and resumed her trade with the other fine liners belonging to the Java-China-Japan Lijn.

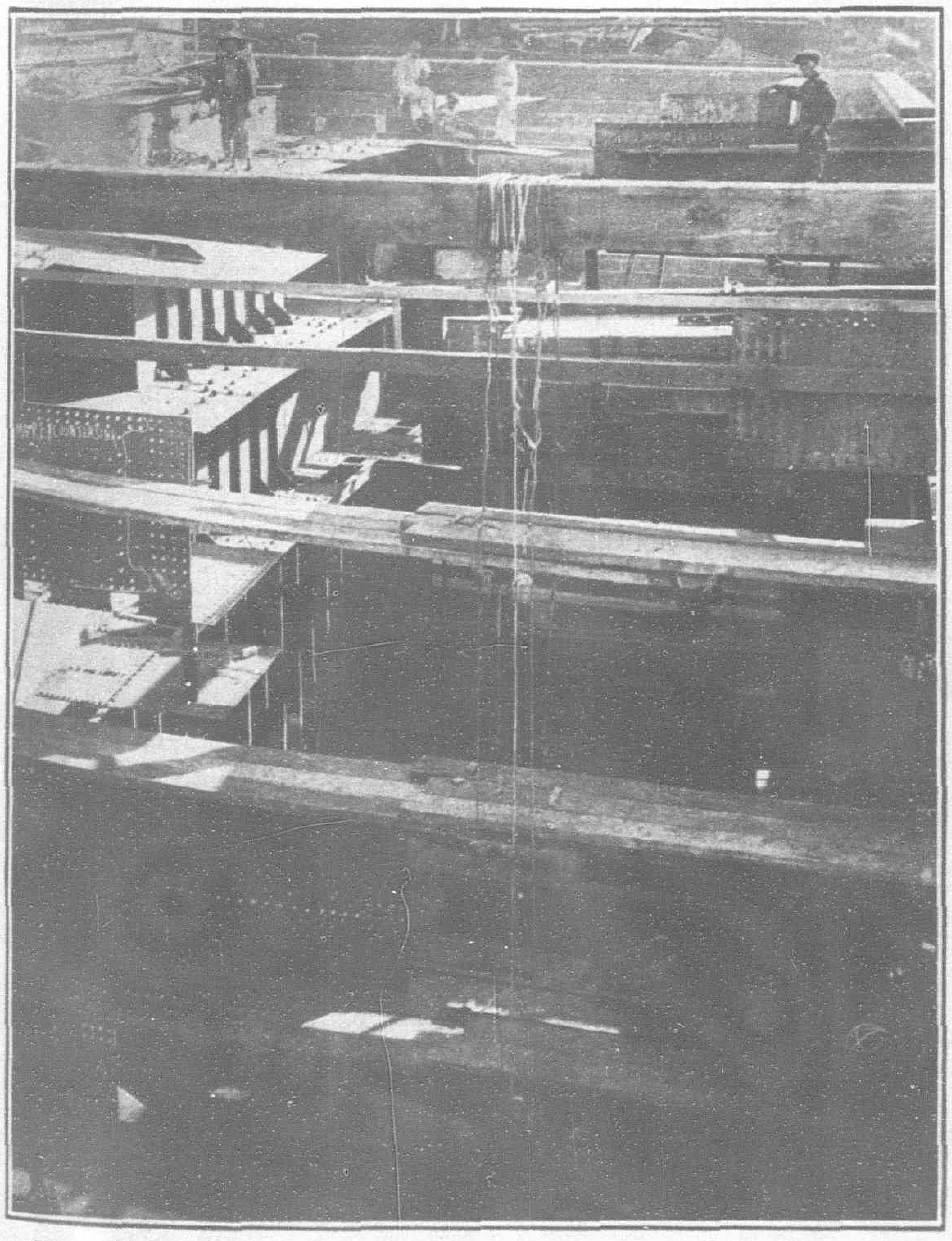
The importance of this work shows up in a convincing manner the great facilities for salvaging, docking and repairing as well as the shipbuilding capabilities of Hongkong, and reflects great credit on the contractors, the Taikoo Dockyard & Engineering Co. of Hongkong, Ltd., who undertook the whole work of salvage and re-construction.

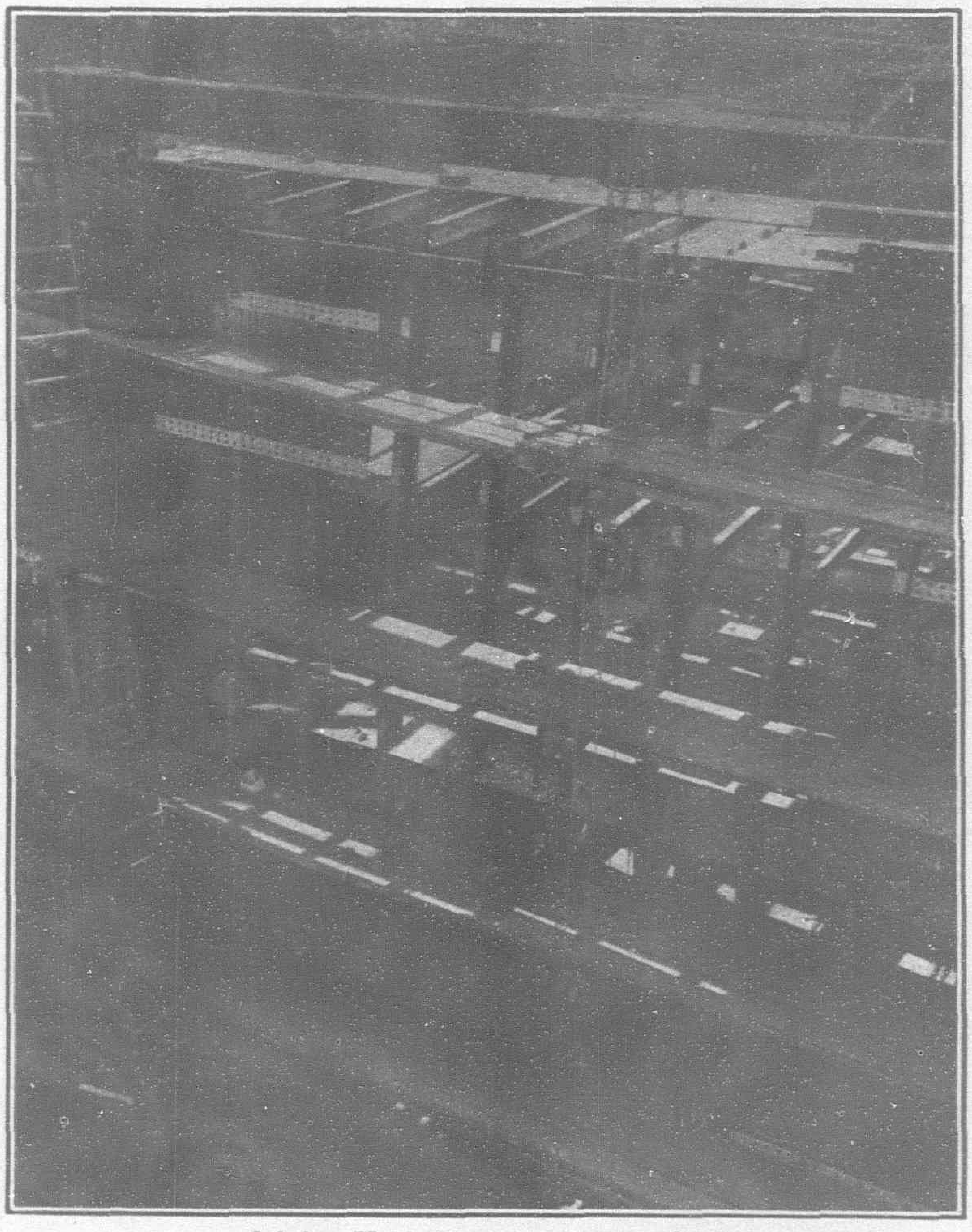
The Taikoo Dockyard and Engineering Company of Hongkong, Limited. Establishment, covering an area of 55 acres situated on the Island of Hongkong, is a thoroughly up-to-date and efficiently equipped shipyard and engineering works.

The Granite Dry Dock, constructed to British Admiralty requirements, has an extreme length of 787 feet, length on blocks 750 feet, width at coping 120 feet, width at entrance 88 feet, depth of water over center of sill at high water ordinary spring tides 34 feet 6 inches. Amongst the larger vessels that have been accommodated in this dock are H.M.S. "Hermes," H.M.S. "Argus," French Cruisers "Jules Ferry" and "Jules Michelet," s.s. "Laconia," s.s. "Empress of Scotland," s.s. "Empress of Canada," s.s. "Empress of Australia," s.s. "Taiyo Maru," etc. To provide for smaller vessels there are three slipways, the largest of which can take up steamers 325 feet long and of 3,000 tons displacement. The motive power for the whole establishment is supplied from a central electric station, direct current being supplied through a sub-station to all machines at 250 volts, the maximum supply being 3,000 kilowatts. The main workshops cover over six acres of

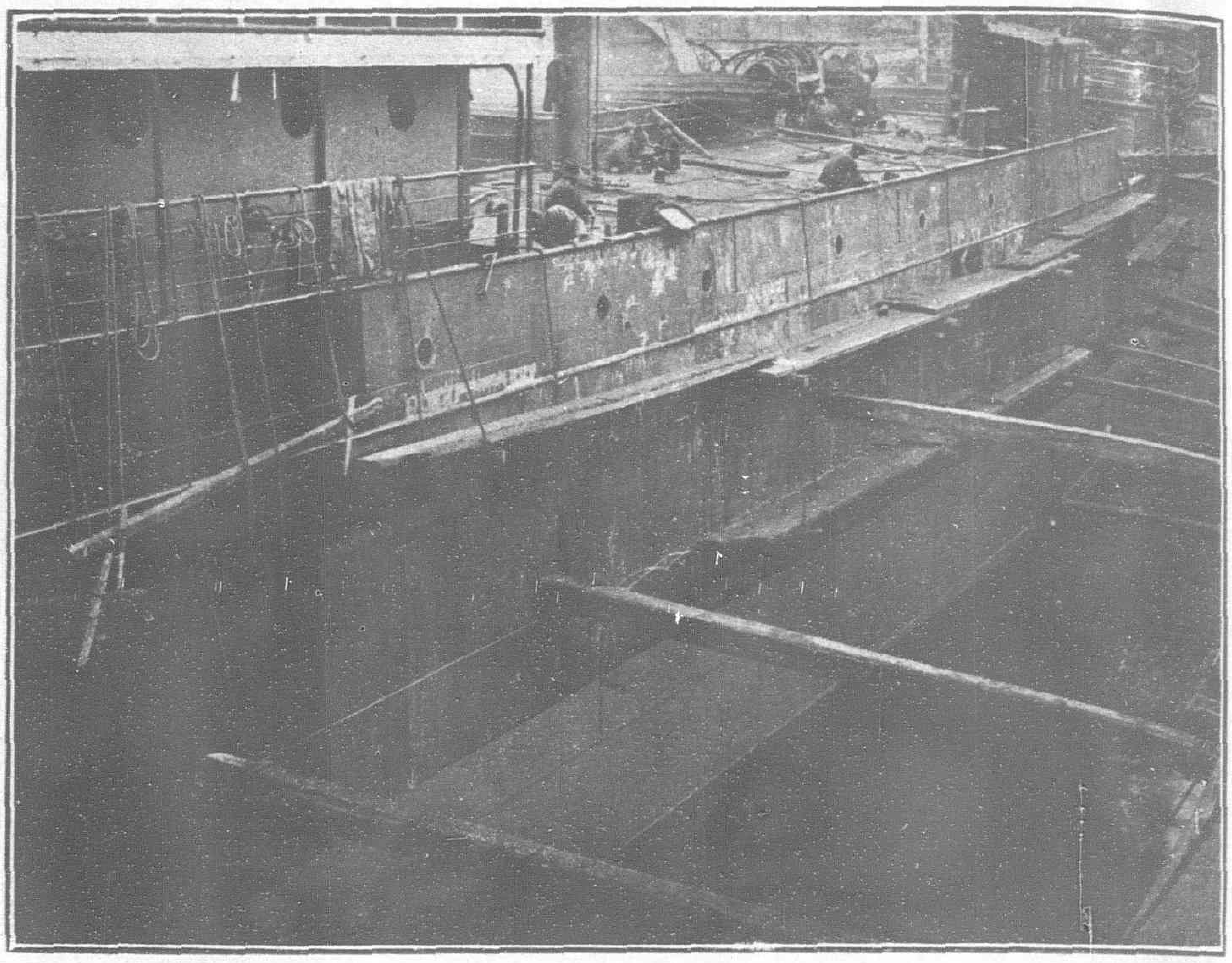

Fore End Along Side Quay Wall Ready to go into Dry Dock


S.S. "Tjileboet" Completed and in Commission

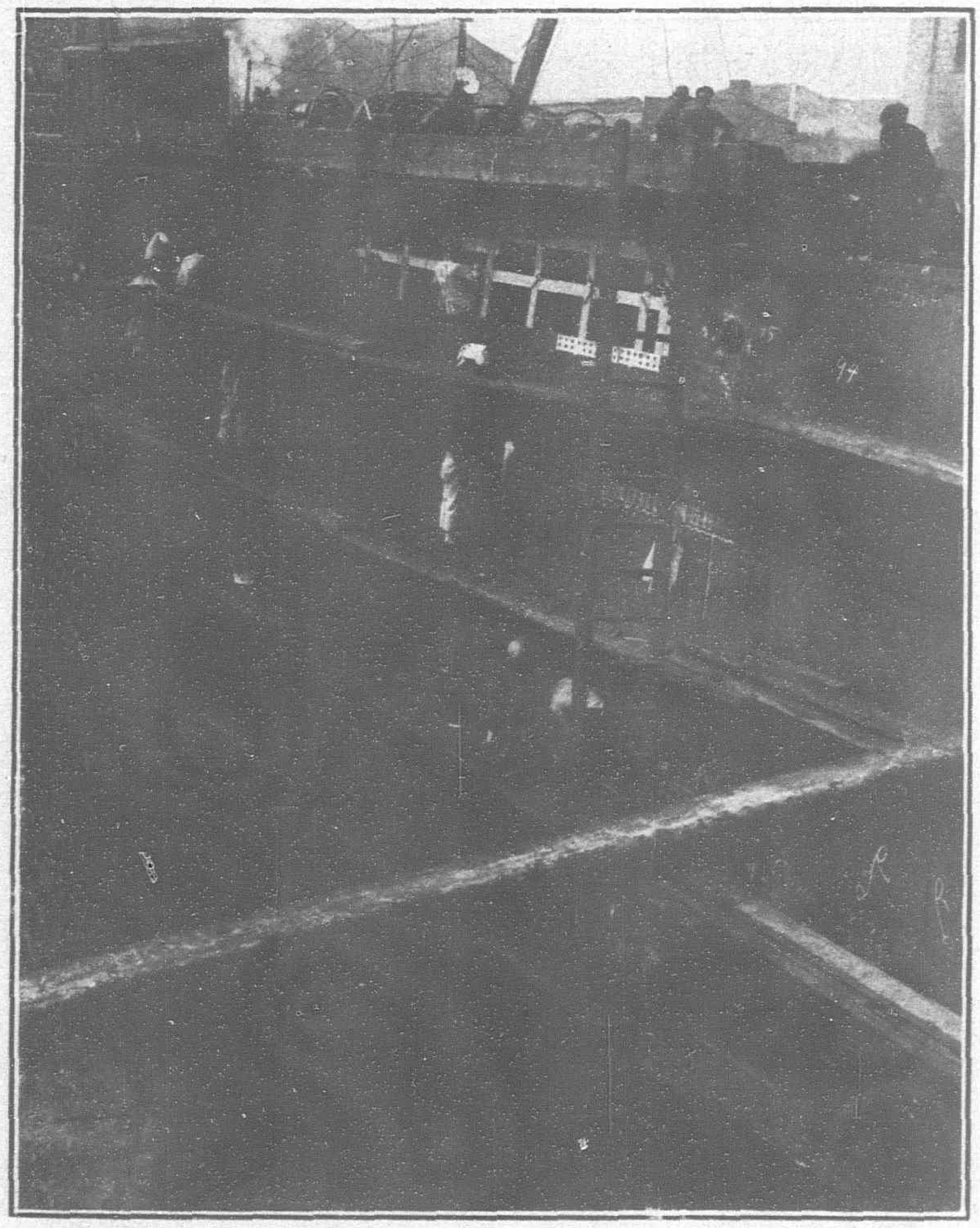

Fore and After Parts Docked and Being Set Ready for Joining Up


Joining Up in Progress in Dry Dock

ground, and comprise erecting shops, heavy and light machine shops, boiler shop, forge and smithy, iron and brass foundries, coppersmiths shop, etc. The machine shops are equipped with the latest type of machine tools for building and repairing engines up to the largest sizes; there is also a complete equipment of machines and tools for building both "Parsons" and "Brown-Curtis" turbines, which the Company build under special licence from Messrs. Parsons. The boiler shop has a most complete plant for building marine and land boilers up to the largest sizes, and plates up to 30 feet long and two inches thick can be dealt with. The building slips are fully equipped for turning out every description of constructional work and are conveniently situated to platers' sheds, moulding loft, carpenters' and joiners' shops, sawmill, etc. The quay wall, built of concrete blocks, is 3,200 feet long, and for the greater part of its length there is a depth of water of 40 feet. The establishment is well provided with a system of railways, travelling cranes, overhead and stationary cranes, for transporting heavy material, the largest cranes having a lifting capacity of 100 tons. The Company possess a powerful salvage tug and complete salvage gear.



After 30 Days in Dry Dock, Completed and Ready for Floating



Joining Up in Progress in Dry Dock

During the Great War this Company was called upon by the British Government to contribute its quota of work, and entrusted it with various repairs, building of standard ships, and other vessels.

Great thought and care have been exercised in the lay out of this establishment and keeping its equipment and machinery efficient and up-to-date, which have been reflected in the high class work the Company has turned out.

Nippon Kagaku Kogyo K.K. (Japan Chemical Industry Co., Ltd.)

AFTER prolonged depression business results of this company have been gradually improving. For the term to close on April 30 a dividend seems to be possible.

This company devotes itself principally to industrial chemicals and fertilizers, at the same time manufacturing pigments, paints, etc. The mill is located at Kameido, in a suburb of Tokyo. Sales have been increasing and production of profitable goods has increased due to improvement in equipment. Zinc Oxide (flowers of zinc) has been selling exceptionally well, total amounting to about 1,000 cases, compared with 400 to 500 cases the preceding term, profit estimated at Y.12,000. Sales of Ritohon (phonetic) have also increased, due to a decline in rubber prices encouraging the rubber manufacturing industry. Profit from this source is estimated at some Y.10,000. Profit on "Komyotan" (a rust resisting paint) principally sold to the Navy is estimated at Y.15,000 to Y.16,000, as production has increased from 300,000 tons last term to double the quantity.

This company imports potassimu fertilizers from Germany and manufactures sulphate of potassium at its own mill. Profit on imports will be about Y.100,000 a term; that on own products is comparatively small as the market is depressed by cheap German products, but profit is expected to increase to about Y.12,000 this term because sales have been successful. Profit on phosphate of potassium which the company began to manufacture this term will amount to at least Y.12,000. Adding profit on seaweeds produced in the Hokkaido (at Nemuro) of some Y.7,000 to 8,000, the total profit for the term will be about Y.80,000.

Interest on Y.3,000,000 debentures to be received from the Tobu Denryoku K.K. (Tobu Electric Power Co., Ltd.) amounts to Y.105,000 a term. Rental on Koriyama Factory from the International Match Company amounts to Y.26,000 a term, making a total of Y.131,000. Deducting interest to be paid on bills payable amounting to Y.1,750,000, of which Y.1,500,000 is fixed on equipment, at 8 per cent. per annum or Y.68,000 a term, the balance of investment income will be Y.63,000. Added to profit from the Kameido Mill, the total will be Y.143,000.

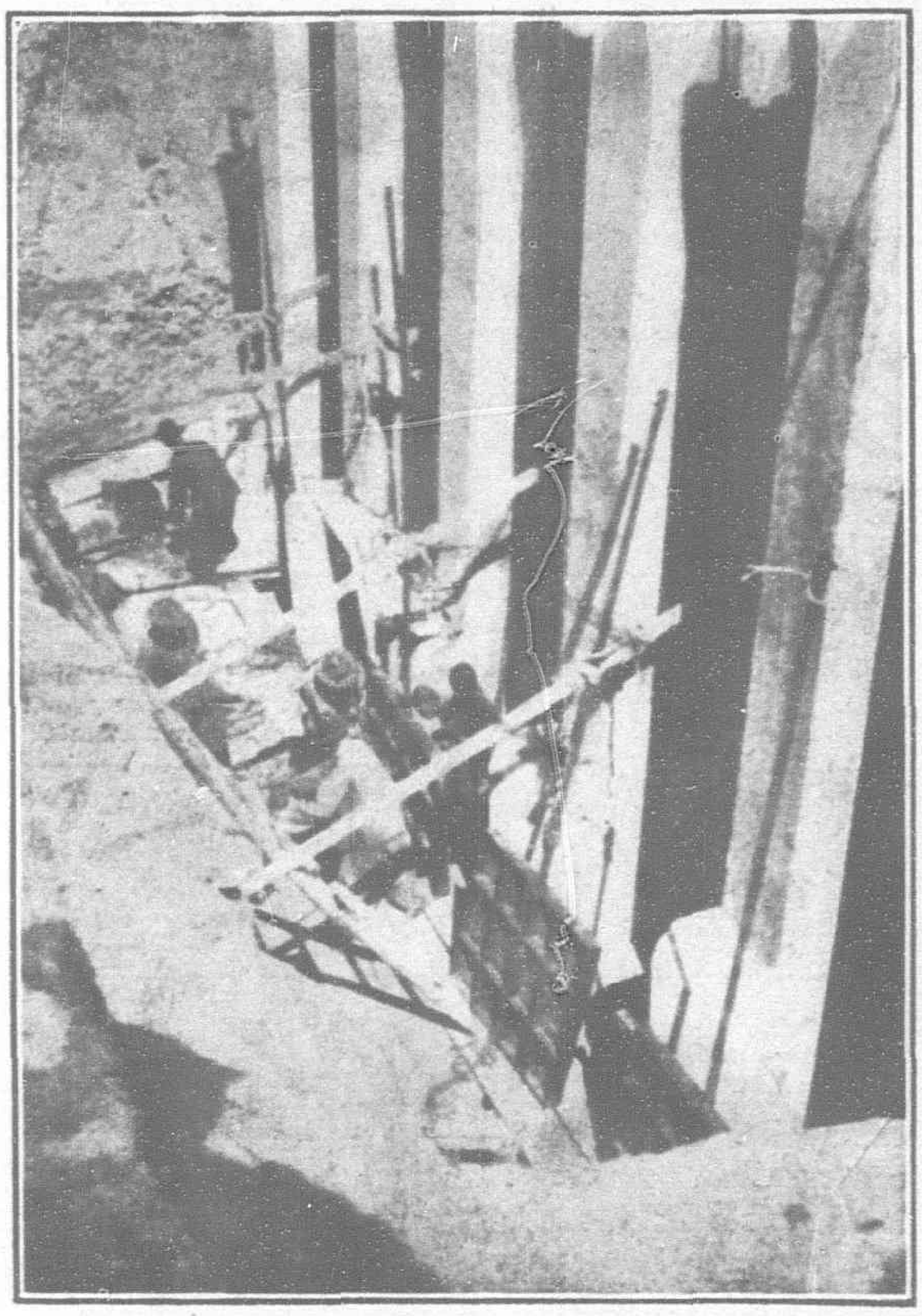
Tax payment for the term will increase by Y.15,000 to Y.37,000 deducting which the net profit will be about Y.106,000. about 5 per cent. of the paid in capital of Y.4,200,000, and an increase of Y.36,000 or 1.7 per cent. over the preceding term. The company may increase the rate of dividend from 3 to 4 per cent. this term.

Shih Lu Irrigation Work

By C. P. Hsueh

IN the vicinity of Peking the spring and early summer rains generally are insufficient for normal growth of crops. So there is an urgent demand for irrigation development. In co-operation with the local people the China International Famine Relief Commission has laid out an irrigation scheme for the Shih Lu region, and is now carrying out the construction work. The irrigable area lies to the west of Peking, extending from Shih Ching Shan in the north to Lu Kow Chiao (Marco Polo Bridge) in the south. This explains how the name of the project is derived.

The work of the whole system is to be carried out in two steps. The first step construction, which is at this time about 90 per cent. completed, will bring water for irrigating 70,000 *mu* of land. When more fund is raised and the whole job is put through, an additional 40,000 *mu* will be served.



Assembling the Steel Gates at the Main Canal Headworks. The gates are 3-ft. 6-in. by 4-ft. 6-in. The lifting device is of the Bevel Gear and Screw type with ball bearings

Source of Water Supply

The wells in the villages near Shih Ching Shan are about 130 feet deep. It is therefore impracticable to use well water for irrigation purpose, even for small tracts of land.

The Shih Lu project takes water from the Yung Ting River at the foot of Shih Ching Shan. The flow of the river is subject to great fluctuation during the year. Minimum discharge generally occurs in April or May. The river has two branches at the point we tap it. According to the discharge data we collected in the last three years, the minimum flow in the east branch of the river, which is the one we draw our water from, is about 210 cubic feet per second. But at ordinary low water that prevails most of the time in the spring and early summer the flow in the east branch is from 600 to 1,100 cubic feet per second.

Application of Water

The land to be irrigated is mostly of sandy soil mixed with a small percentage of clay. In some places a great deal of gravel is found even in the surface soil. The entire region consists of ancient river beds, and gravel deposit exists almost everywhere, at greater or less depths from the surface. When river water is applied to the land, not only the necessary amount of moisture for normal plant growth is insured, but the fertility of the soil will be improved by the deposit of silt that is carried in the water.

Among the principal crops raised in the Shih Lu area are wheat, kaoliang, millet, beans, potatoes and peanuts, the last two being most extensively grown.

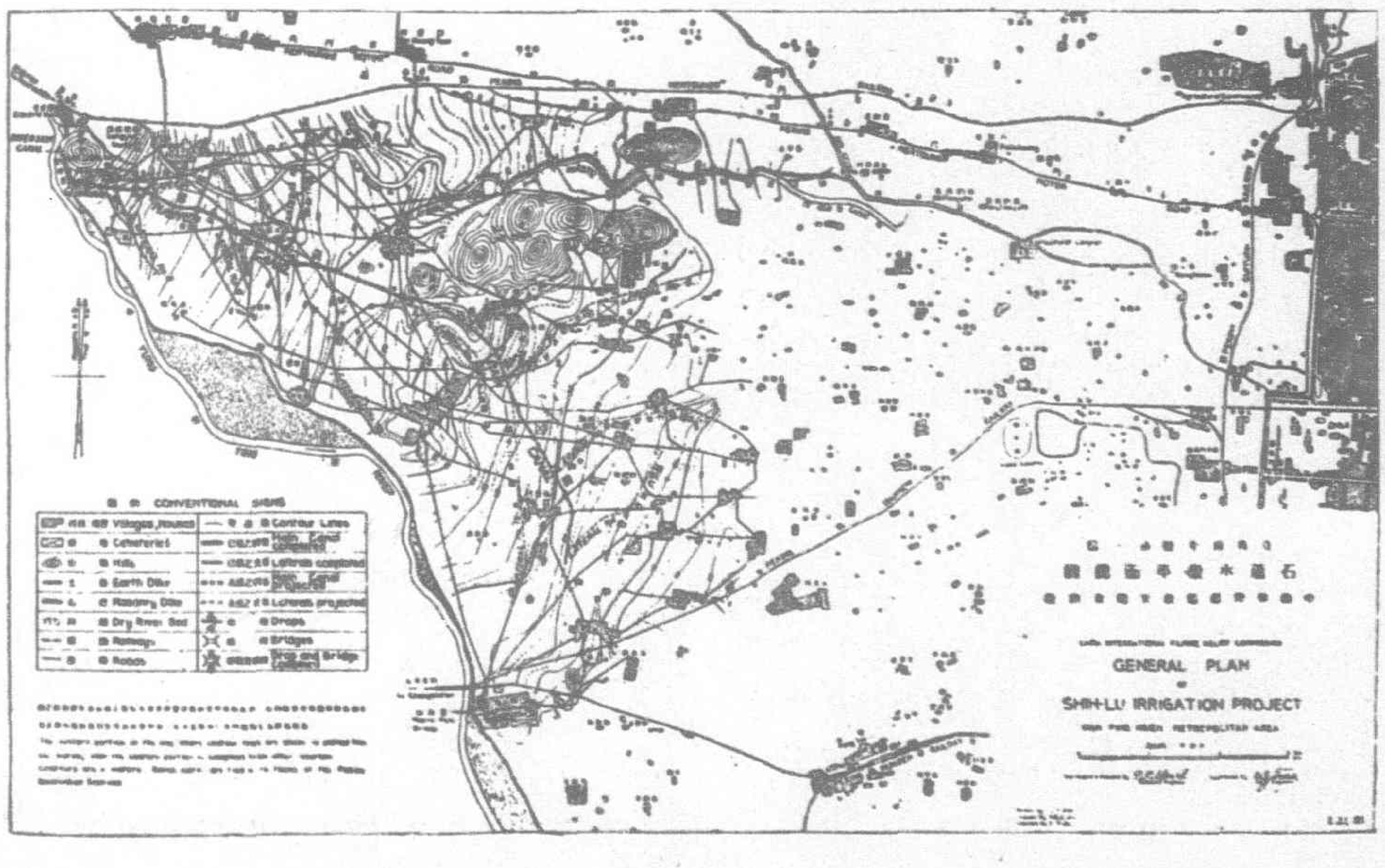
It is proposed to irrigate the land by method of rotation. That is, certain areas receive water on the first day, some others on the second day, and so on, until a complete cycle is made when all the land to be served is watered. Our plan takes a ten-day period for a cycle. Thus every piece of land will be watered three times a month. Each time a depth of two inches will be applied, making six inches in a month. Figuring on this basis, one-tenth of the total irrigable area will be cared for in a day. Making a proper allowance for loss of water due to seepage and waste, and assuming a number of working hours in a day, the required gross carrying capacity of the system can be calculated.

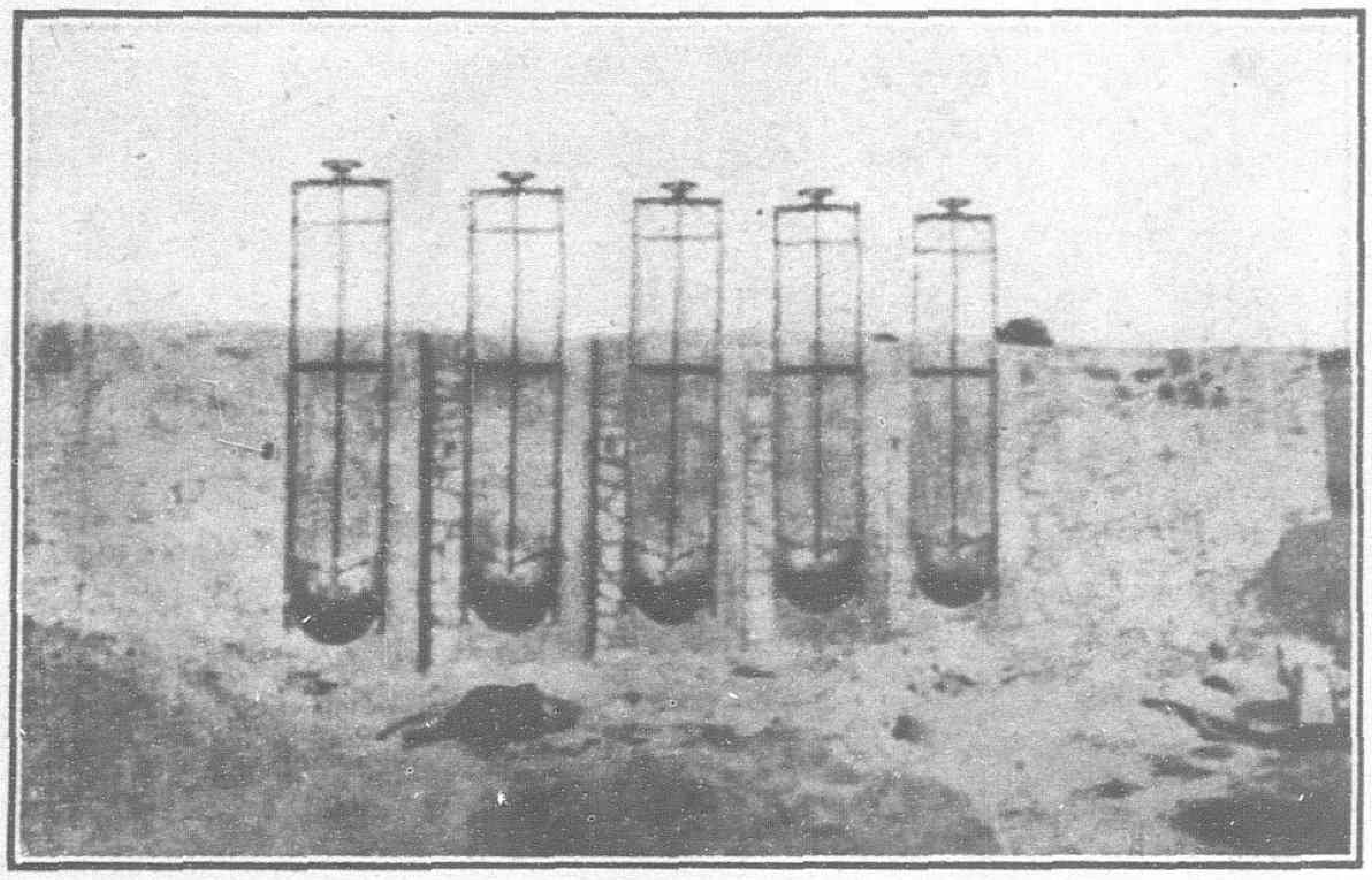
Charge for Water

The local farmers and gentry have formed an Association which will take over the irrigation system from the hands of the China International Famine Relief Commission after the construction is completed. The Association will take care of the management, operation and up-keep. The charge for use of water will be made according to the number of *mu* irrigated. The rate has been tentatively fixed at 40 or 45 cents per *mu* per year. This lessens the detail which would result from selling water by quantity. Simpler devices, like plank weirs, for measuring water, however, might be adopted if our experience in the future will recommend their use. When the farmers are charged for water on the acreage basis, close attention should be given to the question of waste and improper use of water. The use of an excessive amount of water in irrigation is a prevalent evil which not only constitutes a source of waste, but produces harmful effects on the crops.

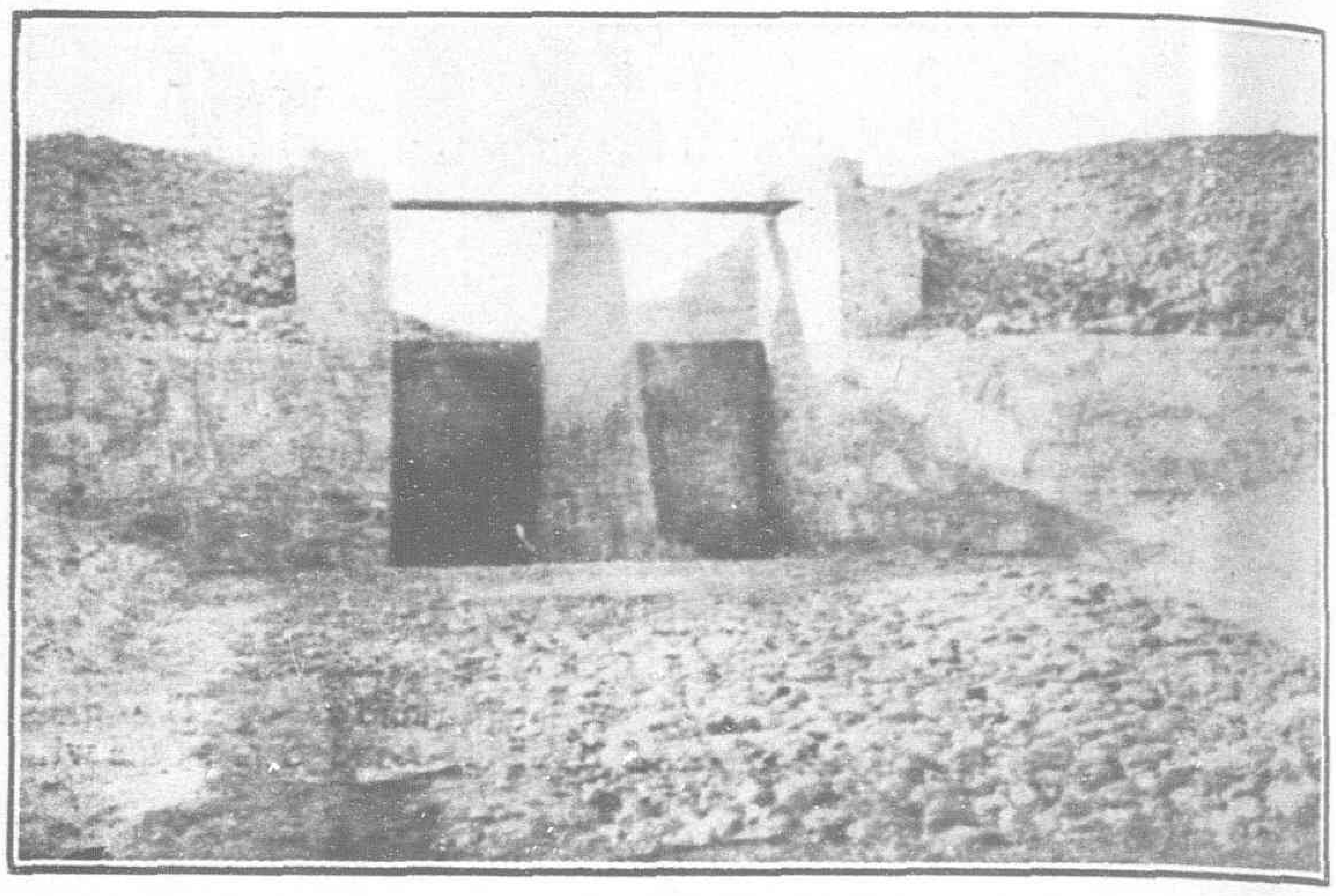
Right of Way for Canals

In connection with most public utility enterprises the right-of-way question usually involves great difficulties. It is not uncommon that projects have to be abandoned just on account of such complications. In the case of the Shih Lu work, the local gentry at first intimated that arrangement had been made with the land owners about the right-of-way matters. According to their promises, during the period of time before the Irrigation Association is in a condition to purchase the land, it would only be necessary to pay a reasonable annual rental to





Gate Structure of the Waste Channel, nearly completed. It consists of five Calco Sliding Gates, each 24-in. in diameter. All the Lateral canals are provided with gates of the same make, varying in number and size for different canals



A typical "Drop" structure on the Main Canal. This particular structure has a height of 5-ft. 5½-in. between the upstream and the downstream floors

each land holder for his land occupied by the canals. But when the engineers came to actually lay out the canal routes, the farmers expressed the opinion that the right-of-way must at the start be procured by purchase. Then long negotiations ensued, resulting in serious delay in carrying out construction work. As the experience thus obtained is suggestive, it has been thought worth while to record it here with a view to emphasizing the importance of making a careful investigation of the right-of-way question when a project involves such a problem.

General Layout of the Work

Before a more detailed description of the various parts of the work is presented, a brief outline of the whole system is sketched below. See the accompanying map.

Across the Yung Ting River at the point of diversion a low weir of the loose rock type is to be put in to maintain the water level at a desired elevation. Between the east end of the weir and the headworks, a distance of 560 meters, is built a channel called the diversion canal, which takes water from the river and delivers it to the headworks. The headworks consists of five steel gates to regulate the flow, and five concrete conduits underneath the river dike. From the rear end of these conduits begins the main canal, which is only partly opened at present, with the lower section to be completed later on. Branching out from the main canal, there are altogether twelve laterals, six of which are built first and the other six will be opened when the main canal is extended. Lateral No. 3 (see map) also serves as a waste channel. It discharges the surplus water of the main canal into a natural creek. In this way the main canal is protected from overflowing its banks. All the laterals are provided with regulating gates to control the flow. It is also planned to install a telephone system at the works so that the gate keepers may easily communicate with each other and carry on their work intelligently.

Description of the System—Temporary Weir

At Shih Ching Shan the Yung Ting River has just emerged out of the mountainous region and the slope of the river bed is yet quite steep, about 1 in 280. During time of high water both the quantity of flow and the velocity give the impression that nothing but the strongest, massive, deep-founded masonry will stand across the river without serious injury. If such a permanent weir were to be built, the cost would be prohibitive. Besides, it will not be justified to attempt building such a structure for the present irrigation scheme.

The above consideration has led to the use of a temporary weir for purpose of diverting the stream water to the canal. If flood water sweeps it out, a new weir will be built each year at comparatively little expense.

The weir consists of two rows of rattan baskets* filled with large bowlders and put across the stream. The baskets are 1½ or 2 meters in diameter and of varying heights not exceeding 2 meters. If at certain points the height of weir is greater than that of one basket, two will be used, one resting on top of the other. The length of the weir is about 100 meters, and its maximum height about 2 meters.

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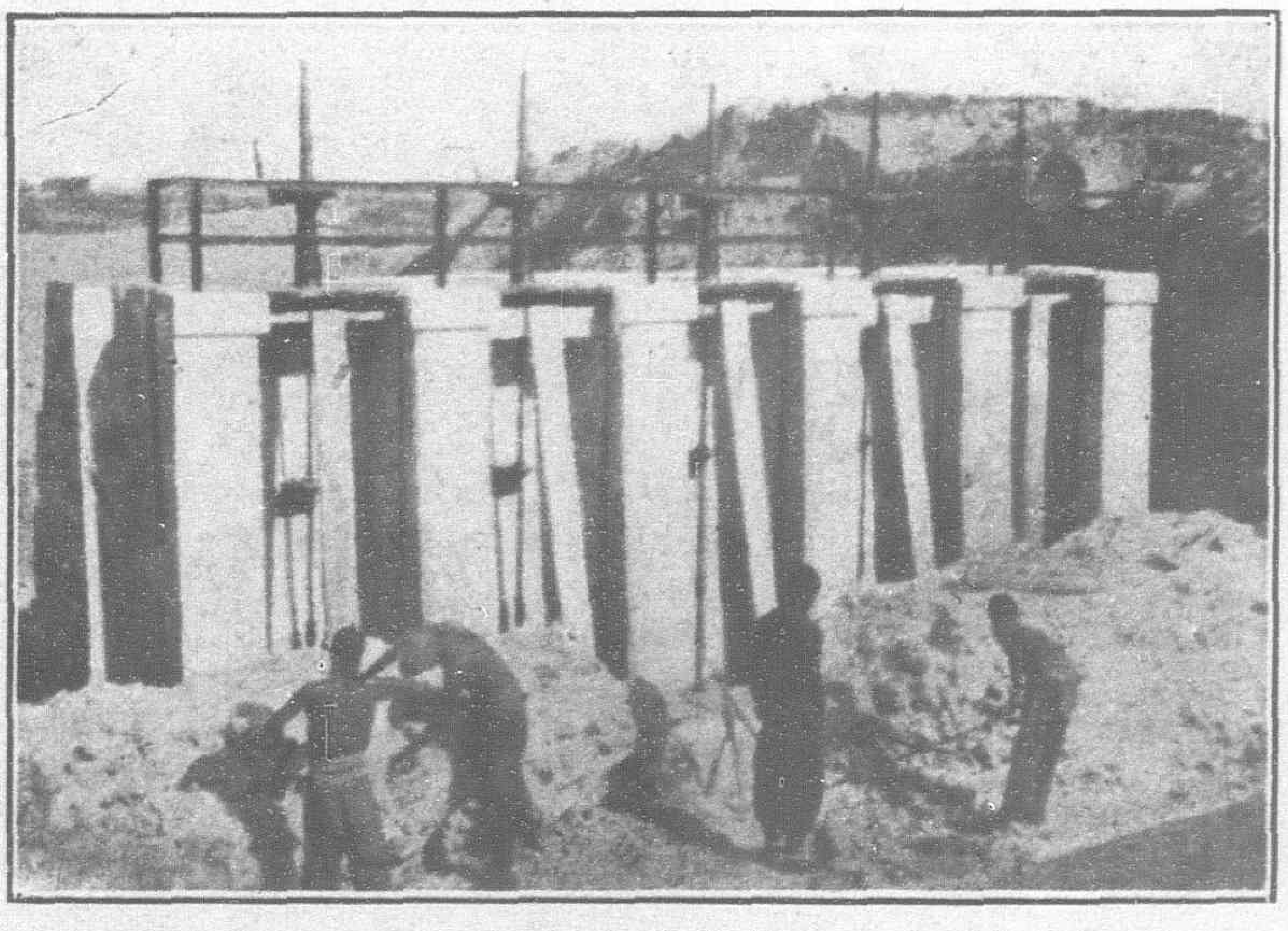
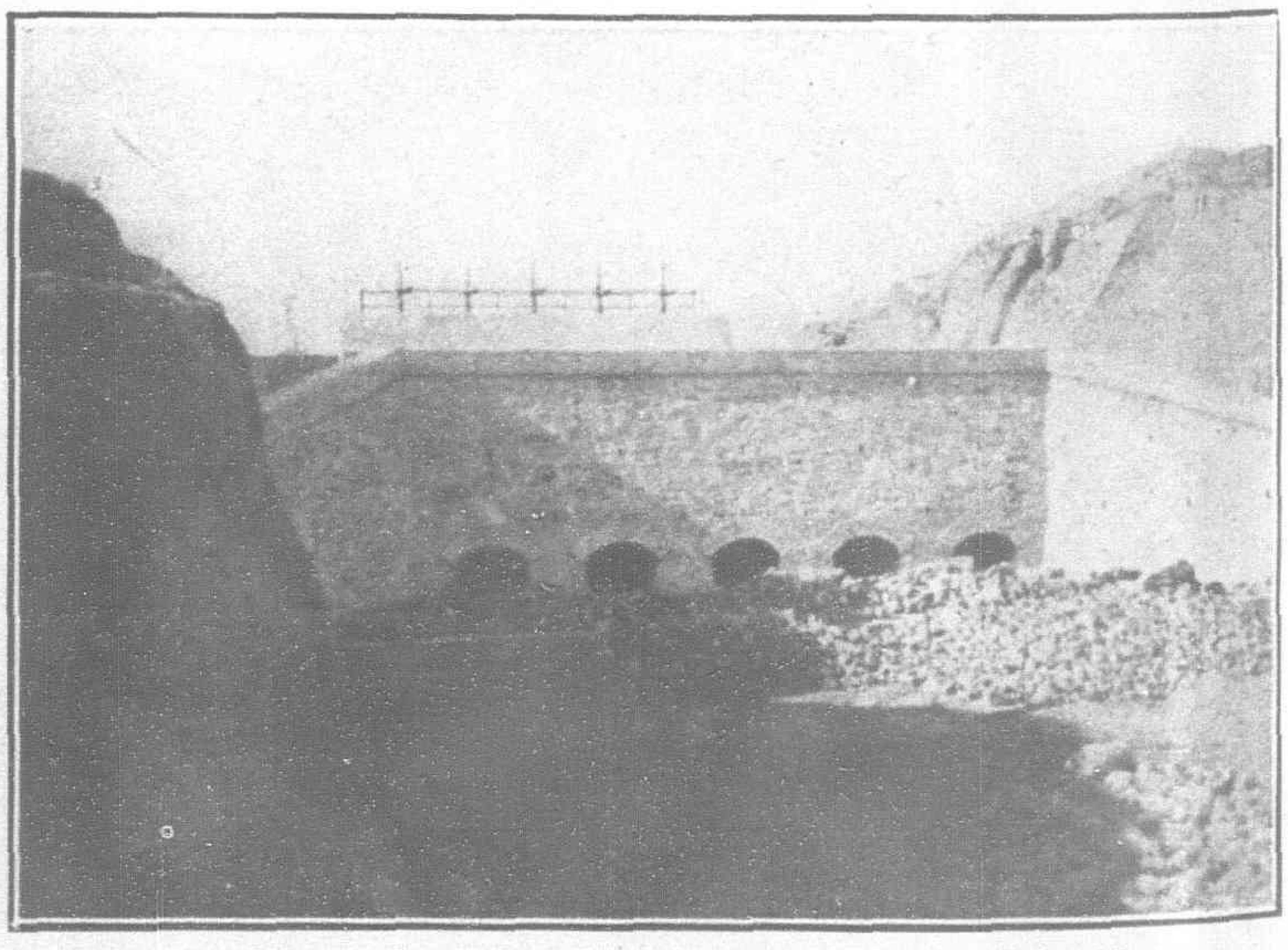
*The material used is taken from a variety of bush grown in the Western Hills. It is stronger than willow twigs. Its Chinese name is "Ching Tiao."



Headworks Structure partly completed. In the foreground will be seen workmen moving earth and lime concrete from Yung Ting River dike that occupied the site of the present structure



Main Canal Headworks, looking from the downstream side. Earth-fill not yet in place. Stone piled in the foreground is to be used for protecting the canal bottom and its sids slopes from erosion immediately below the tunnel exit

Diversion Canal

The diversion canal is built in the river bed, starting from a point on the river where the topography is such that the river is not likely to change its course. At first the canal runs along the foot of the hill and then it follows approximately the alignment of the river dike. On the west side of the canal, for its whole length, is built a stone wall, which is high enough to prevent ordinary high water from entering the canal. A still higher wall capable of keeping off maximum flood water would be more desirable, but its cost is so high that we cannot build it at this time.

Prior to actually constructing the present stone wall, four experimental sections, each about 3 meters long, were built before the 1927 flood season. These test pieces were made in four different ways: (1) rubble masonry laid in 1:2 lime mortar with 1:3 cement mortar facing; (2) same as above except that no cement mortar facing is used; (3) bowlders laid in 1:2 lime mortar with 1:3 cement mortar facing; and (4) bowlders laid in 1:2 lime mortar without cement mortar facing. These sections of wall were entirely submerged in flood water twice during July and August, 1927. Each time the flood water maintained its height four or five days. As a result of the test it was decided to use bowlders in the inner portion of the wall and rubble stone on the outside, both laid in 1:2 lime mortar, with 1:2½ cement mortar for surface joints. Height of wall varies from 12-ft. 0-in. to 14-ft. 6-in. Top width of wall is 2-ft. 6-in. and bottom width, 8-ft. 0-in. Bottom of wall is from 5-ft. 0-in. to 8-ft. 0-in. below ground surface, being uniformly 4-ft. 0-in. below canal bed.

At intervals of about 300 feet along the wall masonry groynes are constructed to deflect water current during flood time, thus serving as a protection for the wall. The foundation of the groynes is about 12 feet below ground surface.

The diversion canal has a bottom width of 20 feet. It is designed for a carrying capacity of 250 second-feet, with a surface slope of 1 in 1,000. The canal is provided with gates at its entrance for regulating the flow, and also a set of sluice gates at its lower end. Bottom of the diversion canal in front of the headworks is 3 feet lower than the headworks floor at the same point. When the gates at both ends of the diversion canal are open, water will not enter the handworks, but simply flows through the diversion canal and returns to the river again. As the bottom slope of the diversion canal is quite steep, about 1 in 260, the velocity will be high enough to stir up all the silt deposit and carry it to the river.

In a distance of 560 meters, or 1,840 feet, the diversion canal gains about 5 feet in head, as compared with the water surface in the river directly opposite the headworks.

Headworks

The headworks structure is built on good gravel foundation without using any piles. It is partly of plain concrete construction and partly of rubble stone masonry. The five conduits for carrying water through the river dike are each 3 feet high, 4 feet wide, and 87 feet long. They have a longitudinal slope of 1 in 200. Carrying capacity of each conduit is about 63 second-feet. Four gates fully open will supply enough water for use, with the fifth gate as a spare unit.

The gates are made of structural steel with bronze contact surfaces to reduce friction and wear. On the upstream side, each gate bears on a set of bronze rollers whose axes are fixed in concrete. This arrangement prevents the gates from shaking when lifted or lowered and reduces the amount of leakage through the gates to a minimum.

The gate stems are round rods 2 inches in diameter. The lifting mechanism is of the bevel gear type. To the main gear is keyed a nut screw, which in turn is engaged to the upper end of the gate stem. The lifting device is provided with ball bearings and is well lubricated. One man can easily operate it.

The gates and their lifting mechanism are furnished by the Chee Hsin Engineering Works, Tangshan, Chihli. Both the material used and the workmanship are excellent. Although the gates have not yet been put to actual use, it is believed that they will fulfill all requirements if operated with reasonable care and skill.

Main Canal

The main canal has a bottom width of 20 feet, with inner side slopes of 1 vertical to 2 horizontal. It has a uniform grade of 1 in 1,200. Depth of water at full flow is 3 feet. Minimum freeboard is 2 feet. It is designed for a carrying capacity of 250 second-feet. Velocity will be about 3 feet per second when there is 3-ft. 0in. of water in the canal, and 2 feet per second when depth of water is 1-ft. 6-in. These velocities will not deposit any fine silt that is contained in the water, and at the same time will not cause any erosion.

The natural fall of the region along the course of the main canal is about 1 in 350, which is too steep for any economical section of canal without producing excessive velocity. In order to make an adjustment for this, a number of "drops" have been put in at suitable intervals. The height of the drops varies from 3-ft. 0-in. to 5-ft. 6-in. The floor, the cut-off walls and the breast wall are built of concrete, while the wingwalls and side-walls are stone masonry work. All the drops are no designed that they also serve as check gate structure, whose function is to raise and maintain water level in the stretch of the canal above the drop during time of low water so as to force the water into the laterals. One of the photographs shown in this article gives a general idea of the type of drops built for this work.

Laterals and Waste Channel

As mentioned before, twelve laterals are laid out for the whole work, and only six of them are built at present. The area of land to be served by each lateral is determined from the map, then the required capacity of that lateral can be figured out accordingly. The bed width of the different laterals varies from 3-ft. 6-in. to 6-ft. 0-in., and the depth of water varies from 2-ft. 6-in. to 3-ft. 0-in. Grade is generally between 1 in 500 and 1 in 1,000. Miximum carrying capacity of the smallest lateral is 50 second-feet, and that of the largest lateral, which is also used as a waste channel, is 90 second-feet.

Where the natural grade is too steep, drops are used to reduce the fall. Many of the drops are located at road crossings, and with necessary modifications they are built as combined structures of bridge and drop. Considerable saving in expense is made by such careful planning.

Flow through the laterals are regulated by gates. Calco gates and Armco corrugated pipes have been used. These products are supplied by the Chinese Engineering and Development Co.

Bridges

There are numerous cart roads in the Shih Lu district. A careful investigation has been made of the importance of the road crossings along the main canal and the laterals. Bridges are constructed only where necessary. Altogether seven bridges have been built on the main canal, and about thirty on the laterals and the water channel.

The main canal bridge is of timber, deck type, supported by masonry substructure. It is 10 feet wide and 28 feet long, with a pier at the middle. The deck of the bridge consists of 3-inch floor planking supported by 3-in. by 12-in. stringers spaced at 1-ft. 11-in. For skew bridges, the stringers have a 4-in. by 12-in. section. Bridges that are used for heavy traffic have their stringers spaced closer together. To give the bridge greater resistance to wearing due to mule-cart traffic, two strips of $\frac{1}{16}$-in. steel plate each 2-ft. 0-in. wide, are fastened to the floor planking by means of 2-inch screws. This method has proved quite satisfactory.

The bridges on the laterals and the waste channel are of the stone-slab type. Good limestone is obtained for this purpose from Shih Ching Shan. The thickness of the slab is 8-in. for a 4-ft. 6-in. clear span, and 10-in. for a 6-ft. 0-in. clear span. Width of slab varies from 1-ft. 2-in. to 1-ft. 6-in. One foot of earth is put on top of the slabs to protect the stone from weathering and reduce the effect of impact due to cart traffic. To retain the earth of the bridge a plank is put on each side of the floor.

These bridges are designed for a loading of 4,000 pounds on two cart-wheels, with the exception that certain heavier bridges are built for 5,300 pounds on two cart-wheels.

Cost Data

A few figures on cost may be of interest to some engineers. Rubble stone, average haul 2½ kilometers, about $5 a *fong*. Broken stone, cost of breaking the stone, $2 a *fong*. Gravel for making

(Continued on page 281.)

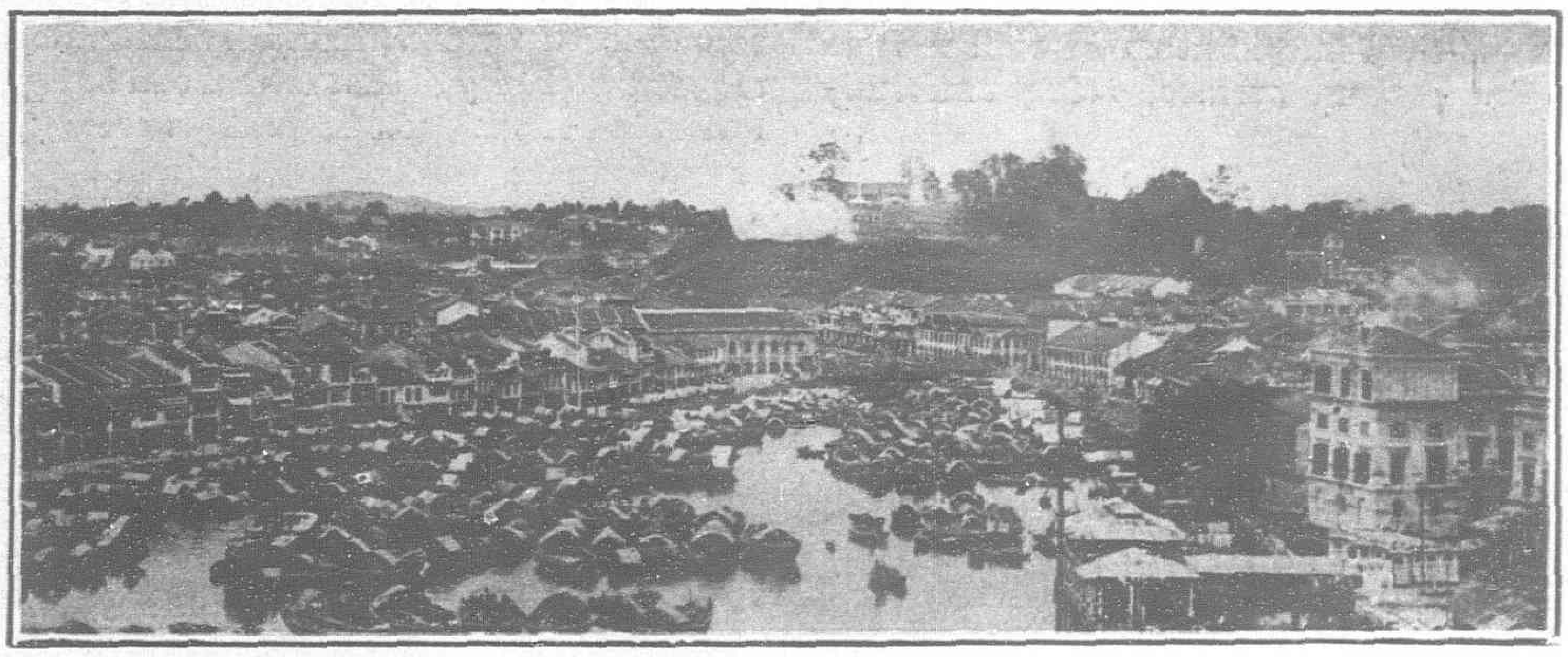
Malaya in 1927: A Retrospect*

By E. A. Snewin

THE milestones with which one usually seeks to pin down time in British Malaya are those of the country's commercial history; its progress or its retrogression. Unfortunately, perhaps, the subjugation of nobler instincts to the sole need of money-making is inherent: the dollar is almighty and beyond the confines of the Public Service it is difficult to find many who really care for the country, its peoples or its prosperity.

Thus it is that in a retrospect one turns at the outset to the economic conditions of the country to ascertain the position of the major industries and through their influence those of lesser importance.

From a first cursory glance at the commercial activities of the past twelve months it is quite apparent that Malaya continues to hold a remarkable stable financial position in spite of a trade setback due mainly to the adverse rubber position during the whole of the past twelve months. It has to be borne in mind, as Sir Hugh Clifford, the Governor of the Colony and High Commissioner of the Federated Malay States, pointed out in October, in his first Budget speech at Singapore, that in every country, and especially in a country like Malaya, expenditure is bound to increase in response to the demand for improvements, and in the Straits Settlements expenditure has to be met from a very elastic revenue. The same is applicable to the Federation.

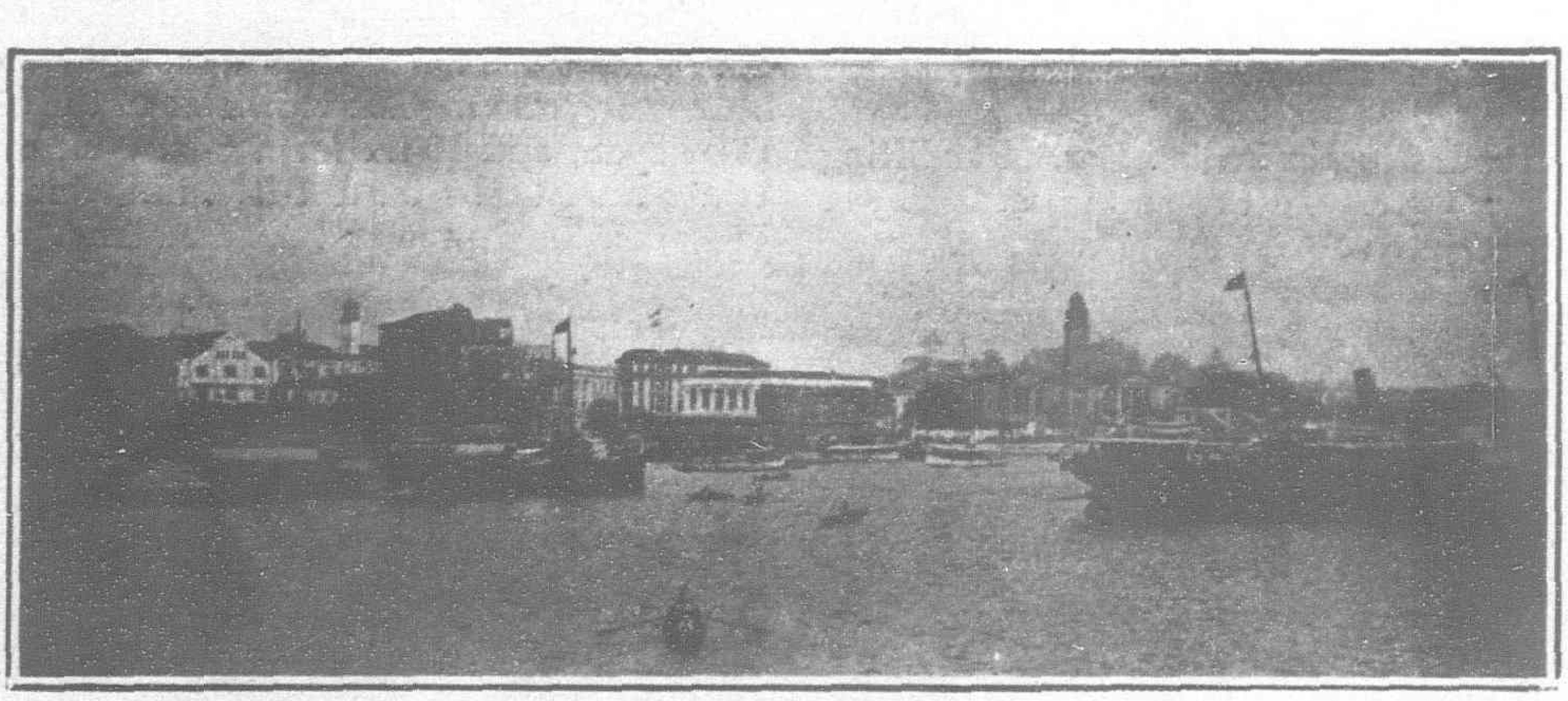


Singapore River

Although the year under review cannot be described as standing out in the history of the country, it is quite evident that in the exploitation of its natural resources and in the development and organization of its overseas trade it continues to make rapid progress. Its economic position must for many years be entirely dependent upon conditions in the tin and rubber industries, but it is now recognized and is quite obvious that the sudden price fluctuations which have come to be regarded as an inevitable feature of the world market for these commodities are no longer followed by equally sudden variations in the volume of general trade passing.

On the whole, 1927 has been mildly satisfactory for the merchants generally, although the trade slump has reacted upon their returns; but by no means so adversely as in some of the preceding years.

Rubber has certainly been disappointing. The drop in value was expected: a far better outlook in 1928 is anticipated. At the beginning of 1927 the commodity stood at 65¾ cents and within the past few weeks it has been hovering around 63 cents. Throughout the year attention has been focussed on the future of the Government's restriction scheme and considerable anti-restriction propaganda, especially among persons whose interest is more in buying and selling than in planting, became pronounced. Experts do not appear to have been much in doubt about the soundness of the scheme: its actual working seems to have been in need of revision. It may be recalled that in the House of Commons in July the Secretary of State for the Colonies states definitely that in the present circumstances he did not contemplate either the withdrawal of the scheme, any alteration in the pivotal price on which it is based or any other substantial variation in its provisions. He further added, although he did not care to bind himself, that should any amendment be thought desirable the notice given would be a matter of months and not merely a few weeks. Prices have continued to fluctuate with each fresh rumor of what is going to be done as regards amending the scheme. The present conditions, however, are likely to remain until the Colonial Office makes some further definite statement regarding what changes, if any, they propose in the restriction scheme for the year 1927-28.



Singapore Harbor

The feature of the tin market during the past year has been the fact that production and consumption have been gradually approximating. Important changes are taking place in the methods of mining, particularly with respect to dredges, where it appears that greater perfection in tin saving methods is being obtained by the more general use of jigs, now past the experimental stage. But it is claimed that the expansion in the Malayan output, due to the operation of the many new companies, will be offset by the reduction in the recovery on the part of the Chinese, who work the richer ground by primitive methods. The areas available for exploitation in this way are said to be approaching exhaustion while it is argued that any substantial decline in the metal would render unprofitable some of the areas still available. Supplies from Malaya have been sufficient to dissipate any fears of serious shortage though the margin between supply and demand is still narrow.

Tin has slumped and while statistically there is little to account for the drop the key to the position is to be found in America and the lack of interest shown by consumers in that country is the prime cause of the fall in prices. The year opened with tin at £294. 12. 6 per ton metal, and with minor fluctuations showed a general strengthening until £304. 10. was reached in February. Thereafter there was a gradual and almost constant falling away and at the time of writing (November 11) it is as low as £253. 15.

The extent to which local authorities have added to their administrative work that of supplying materials and services equally with, or to the exclusion of the private capitalist, is to be noted. One of the most important of these is the great electric scheme at Chenderok for the Perak Hydro-Electric Co., which has meant an expansion of the market for electrical goods and apparatus. The opening of the new power station at Singapore, the largest of its kind in the Far East, will also encourage a more general use of electricity and open up a big field for the exporter at home.

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* Inter-Ocean

Elaborate bucket dredges and hydraulicing shaft and light railway equipment for the tin mines represent, of course, the bulk of the imports under machinery, but a substantial proportion of the increase can undoubtedly be traced to purchases of more modern machinery for rubber factories, saw mills, pineapple canneries and for the preparation of copra. Work at the Naval Base on Singapore Island is proceeding, the past year having seen the completion of a light railway running from the F.M.S. Railways at Johore to the site of the Base, while substantial quarters for the staff have been erected at Seleatar, on the Straits of Johore. During October a representative of an important British engineering firm was on the site making a preliminary inspection of the ground with a view to tendering for the Admiralty contract for harbor works, estimated, according to a London report, to amount to the enormous sum of £10,000,000. Indirectly, the construction of the docks, wharves and air base is bound to act as a stimulant to trade, although the fear of an attendant increase in the cost of living on the island is not altogether without foundation.

Yet another factor which tends to strengthen the hopes of those who look forward to a long period of commercial stability in Malaya is the changed official attitude towards some of the lesser industries of the country. From those ominous clouds that cast such dark shadows over the country six years ago when the rubber planting industry was passing through the worst period that it has ever known, a much brighter outlook is dawning for agriculture generally in Malaya. To this we are indebted to the Department of Agriculture, whose operations have been periodically, and usually adversely, criticized on the grounds that little or no attention is given to products other than rubber.

It must not be forgotten that the peculiar conditions in Malaya make it imperative that economics should always be a first consideration. Mr. A. S. Haynes, the enthusiastic Secretary for Agriculture, rightly insists that it is useless to spend months or years experimenting with a new crop or new process, which a few days' study of economics would show to be fated never to repay high labor costs. The great bulk of immigrant population would not work for long at low wages, while the indigenous population is too small seriously to affect the labor market.

That the agricultural resources of the country are very considerable is apparent to all who care to study the problem. The areas at present under cultivation are estimated as follows :—Rice, 2,250,000 ; paddy, 650,000 ; coconuts, 500,000 acres ; oil palms, 15,000 ; pineapples, 21,000 ; tapioca, 32,000 ; areca nut 10,000 ; coffee 5,000 (it is considered that another 25,000 acres in full bearing would make Malaya self-supporting in this respect) ; and nipa palm, 8,200 acres.

During the past year the Department of Agriculture has been considering special problems relating to improvement of the balance between supply and demand of locally grown foodstuffs, especially rice ; investigations on major crops, rice, coconuts and oil palms, pineapples, areca nuts and coffee ; the chemistry, physics and microbiology of Malayan soils ; the production of industrial alcohol ; bananas in relation to Panama disease ; and the further investigations on *Artona catoxantha* and its parasites. It will therefore, be appreciated that, handicapped as the country is on account of economic considerations, the lessons of the last rubber slump pointing to a demand for " other crops " have been taken to heart and that no soil is being left untilled to expand the natural resources of Malaya.

The import and export trade of the Colony is dealt with elsewhere in this issue (" The Clearing House of the Eastern Seas," page 713). From the details of particular trade results cited in that survey one may pass to the larger issues involved in the prosperity of the country, which it must be remembered centers entirely upon the labor supply, whether from India or from China. Without it we could not carry on ; our rubber estates would be ruined and our tin mines would have to close down ; transport both by road and rail would be hampered and our shipping would be held up. The ports of import and of export at Singapore, Penang, Port Swettenham and Malacca would no longer thrive and the trade of the country would be brought to a standstill. Fortunately the foresight of our administrators has safeguarded supplies of labor to such an extent that on account of the generous terms offered and the humanitarian treatment meted out in the way of education, healthy coolie lines, medical attention and a fair wage, the lot of the laborer in Malaya is a happy one and the force as a whole is contented.

That the sordid side of life has found its way into the country cannot be denied. From Canton and from Swatow and from other ports of China the bad elements have arrived wholesale with the result that during the past few months the activities of gunmen, representing the most callous side of our immigrant population, have become very pronounced. It is quite possible that the Government may restrict Chinese immigration in an endeavor to put a stop to lawlessness. The Intelligence Services of the peninsula are wakeful to their activities and there is little that passes in the underworld of which they are unaware.

But let us turn from matters to men. During 1927 much has happened of moment which will leave a permanent impression upon the life of the country. There have been important changes in administrative circles, unprecedented in the history of the peninsula. The Governor of the Colony and the High Commissioner of the Federated Malay States, Sir Laurence Guillemard, retired after an extension of his term of office, and his successor, Sir Hugh Clifford, came here in June to renew his acquaintance with the peninsula after an absence of many years. Major-General Sir Theodore Fraser, who had earned great respect and esteem during his three years as Officer Commanding Troops, Malaya, was replaced on his retirement a few months back by Major-General C. C. van Straubenzee, of the Royal Engineers. In affairs ecclessiastical, the first Bishop of Singapore, the Rt. Rev. Dr. C. J. Ferguson-Davie, after nineteen years of devoted service in one of the largest Colonial Sees, retired from active work among his parishioners and was succeeded by a former chaplain of the forces in Malaya, the Rev. B. C. Roberts, who was consecrated Bishop on October 18 in Westminster Abbey.

Summarized briefly, the past year in British Malaya, although it has not been all that was hoped, has seen important results achieved and the outlook is bright. There is nothing to be feared and we can push ahead in the knowledge that notwithstanding a setback in our trade and a falling off in the realization of our staple commodities our commercial standing is second to none in the outposts of the Empire.

Shih Lu Irrigation Work

(Continued from page 279.)

concrete, $1 a *fong* for screening only. Sand, average haul 2 to 2½ kilometers, $2.80 a *fong*. Lime, $3.80 for a thousand catties, or 1,330 pounds, including cost of transportation for 15 kilometers. Cement, $2.70 a bag plus 40 cents for shipping it from Peking to Shih Ching Chan. Carpenter's wages, 60 cents a day. Masons, 55 to 60 cents a day. Common labor, 40 cents a day.

Main canal excavation, 33 cents a *fong* for good earth, and 45 cents a *fong* for earth containing 30 per cent. of gravel. Rubble stone masonry, laid in 1:2 lime mortar with cement mortar facing, $15 a *fong*. Concrete, 1:3:6 mixture, $38 a *fong* not including any formwork. Concrete. 1:4:8 mixture, $30 a *fong* without formwork.

For the Shih Lu work, $113,000 has been spent up to this time, which includes $20,000 for right-of-way. It will have a total cost of $135,000 when the first part of the program is finished, namely, work for irrigating 70,000 *mu* of land. When the extension work is all completed, $65,000 more will be added to its cost.

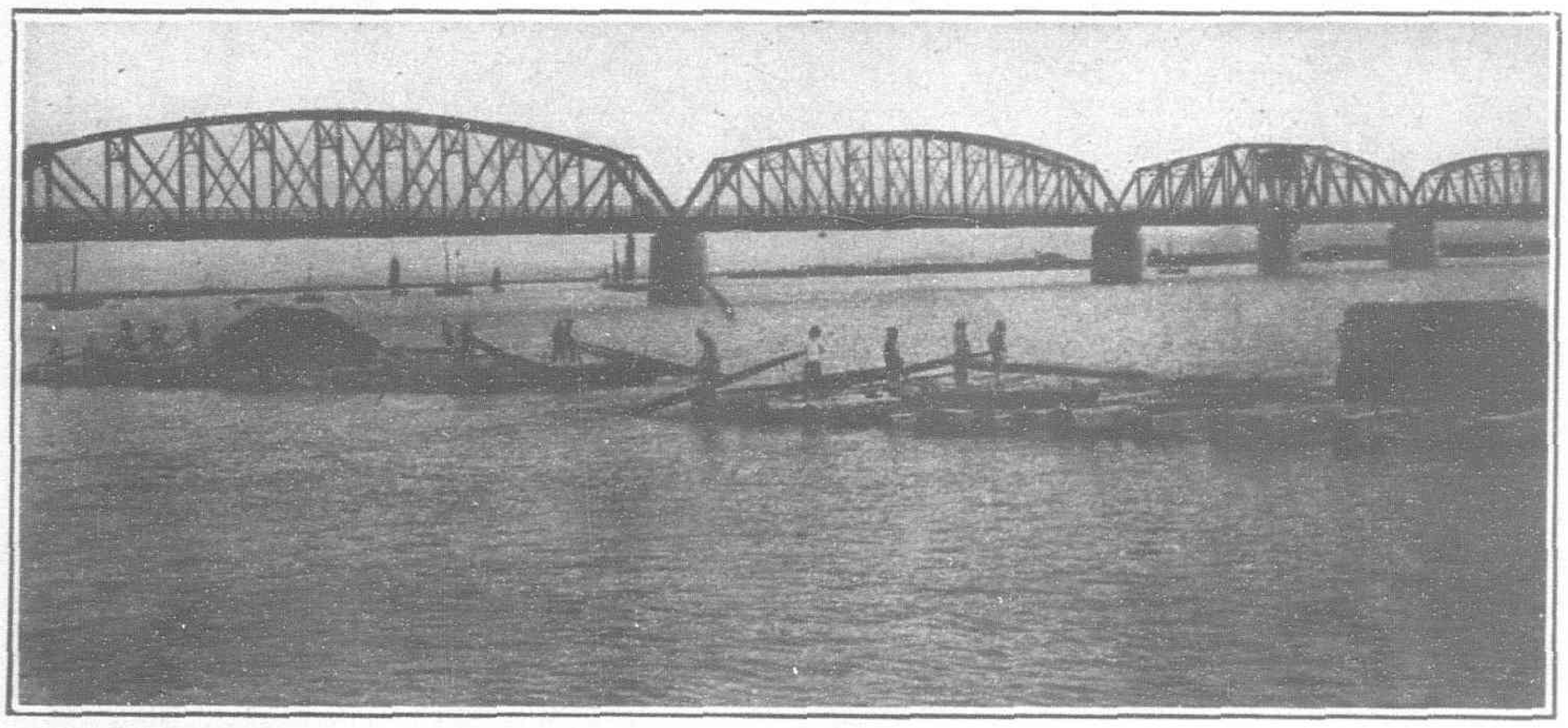
Benefits to be Derived

Some farmers in the Shih Lu area have expressed the opinion that when their land is irrigated the summer crops should yield twice as much as before. The autumn harvest will also be benefitted, but not so much as the summer harvest, because rain water may be sufficient or nearly so for the autumn crops. With a good supply of water more land will be devoted to truck gardening. At present practically no vegetables are raised in the Shih Lu region.

Communications in Korea

State Railways

THE first instance of a railway in Chosen was the Keijo-Jinsen line opened in 1900, and this was followed in 1904 by the opening of the main line between Keijo and Fusan. These were undertakings by private companies. In 1905 the Keijo-Shingishu main line and the Masan branch line, both built for army use during the Russo-Japanese War, were opened to the public, and with the former the trunk line traversing the country from north to south was made complete. In 1906 the Japanese Government took over all existing lines and placed them under the Railway Bureau of the protectorate, but on the Government-General being established in 1910 control of them once more changed hands. During all this time improvement and construction work was steadily carried on, and the year 1910 saw the completion of the Heijo-Chinnampo line; in 1911 the Yalu was spanned by an iron bridge to connect the Korean and Manchurian railways; in 1914 the Taiden-Mokpo line and the Keijo-Gensan line were completed; in 1915 parts of the Gensen-Kainei line were completed and opened to traffic, between Gensan and Kanko in the south, and between Seishin and Kainei in the north.



Railway Bridge over the Yalu River

Single control of the railways in Chosen and Manchuria being considered advisable from many points of view, the Government-General in 1917 concluded a contract with the South Manchuria Railway Company and entrusted to it the entire management of the Korea State railways, on condition that out of the net earnings the equivalent of 6 per cent. on the total amount of capital furnished by the Government should be paid to the Government and any remaining profit divided equally between the two parties. This arrangement, however, entailing a good deal of trouble in settling accounts, another agreement was made in 1918, relieving the Company from surrendering the half of any excess profit obtained, but requiring it to bear construction costs instead. On the expiration of the above term a new agreement was concluded in 1920 on the same basis, but with some few corrections.

The railways in Chosen, by bridging the Yalu which forms the north-western boundary, became at once part of the international railway system, and this resulted in through traffic being established between Fusan and Mukden. Though the railway business suffered for a time through the influence of the World War, it was not long before it regained and even surpassed its former activity. The following table gives some idea of railway development in this land.

Fiscal Year			Length *Miles*	Passengers	Freight *Tons*	Receipts *Yen*
1923	..	..	1,189	16,760,483	4,237,183	30,371,108
1922	..	..	1,777	15,252,426	3,791,571	26,952,021
1921	..	..	1,165	13,821,144	3,331,391	24,815,997
1920	..	..	1,157	12,421,441	3,186,073	23,816,807
1910	..	..	674	2,024,490	888,723	4,095,752

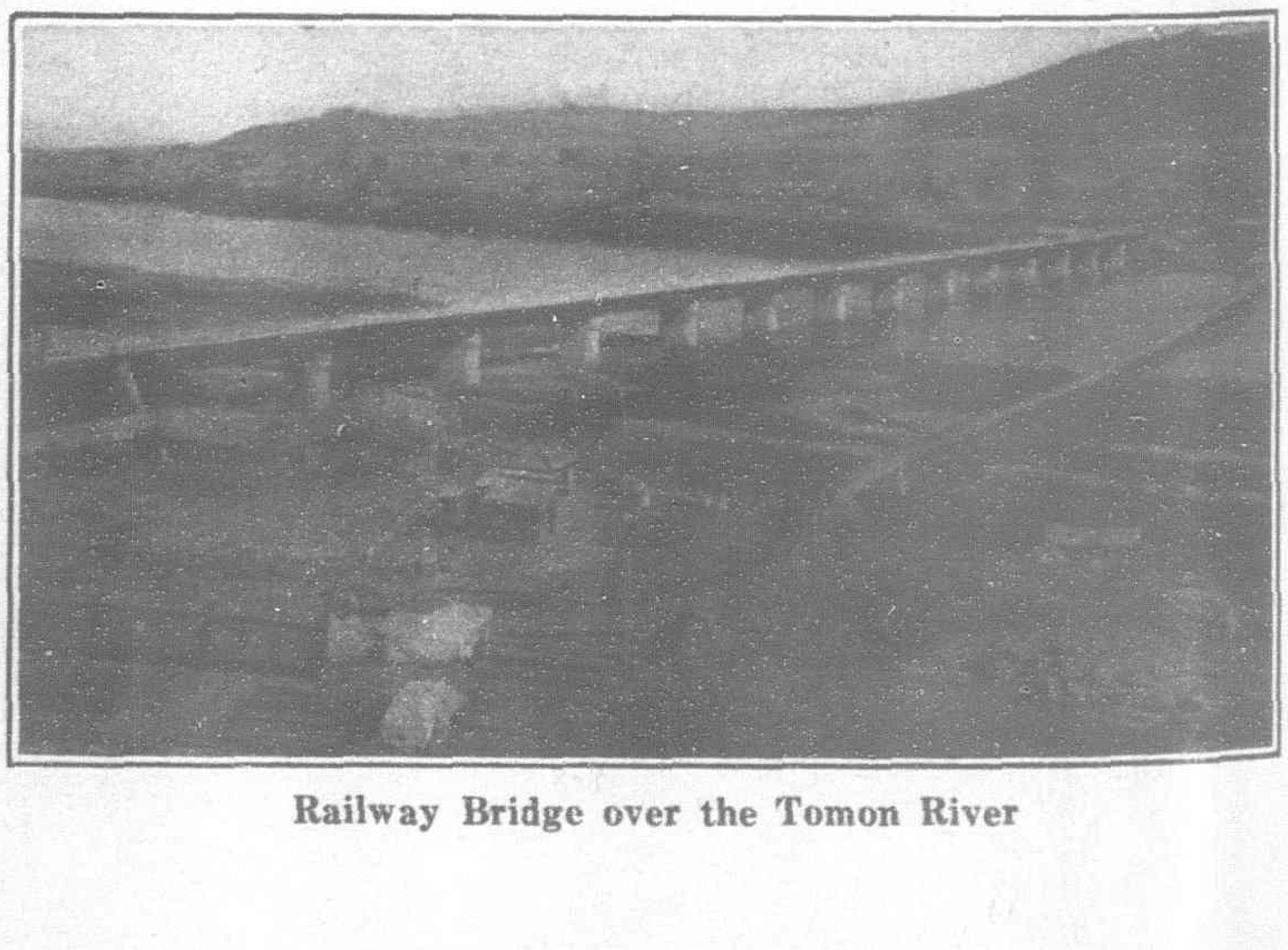
The hotel business as an adjunct to the railway business is run chiefly for the accommodation of foreign tourists. It was first started in 1912 at Fusan and Shin-gishu, the two principal terminals, by making use of the upper storeys of each station. In 1914 the Chosen Hotel was built on a grand scale in Keijo with two branches at Kongo-san for the convenience of mountain sight-seers, and in 1922 a similar hotel was opened in Heijo.

Of the lines now under construction the remaining section of the Gensan-Kainei line will be completed in 1928, and of the Chinkai line in 1926. It is now planned to construct a line between Heijo and Gensan across the middle of the country, 133 miles in length, and this, it is hoped, will prove an important link in the chain of traffic between North China and West Japan.

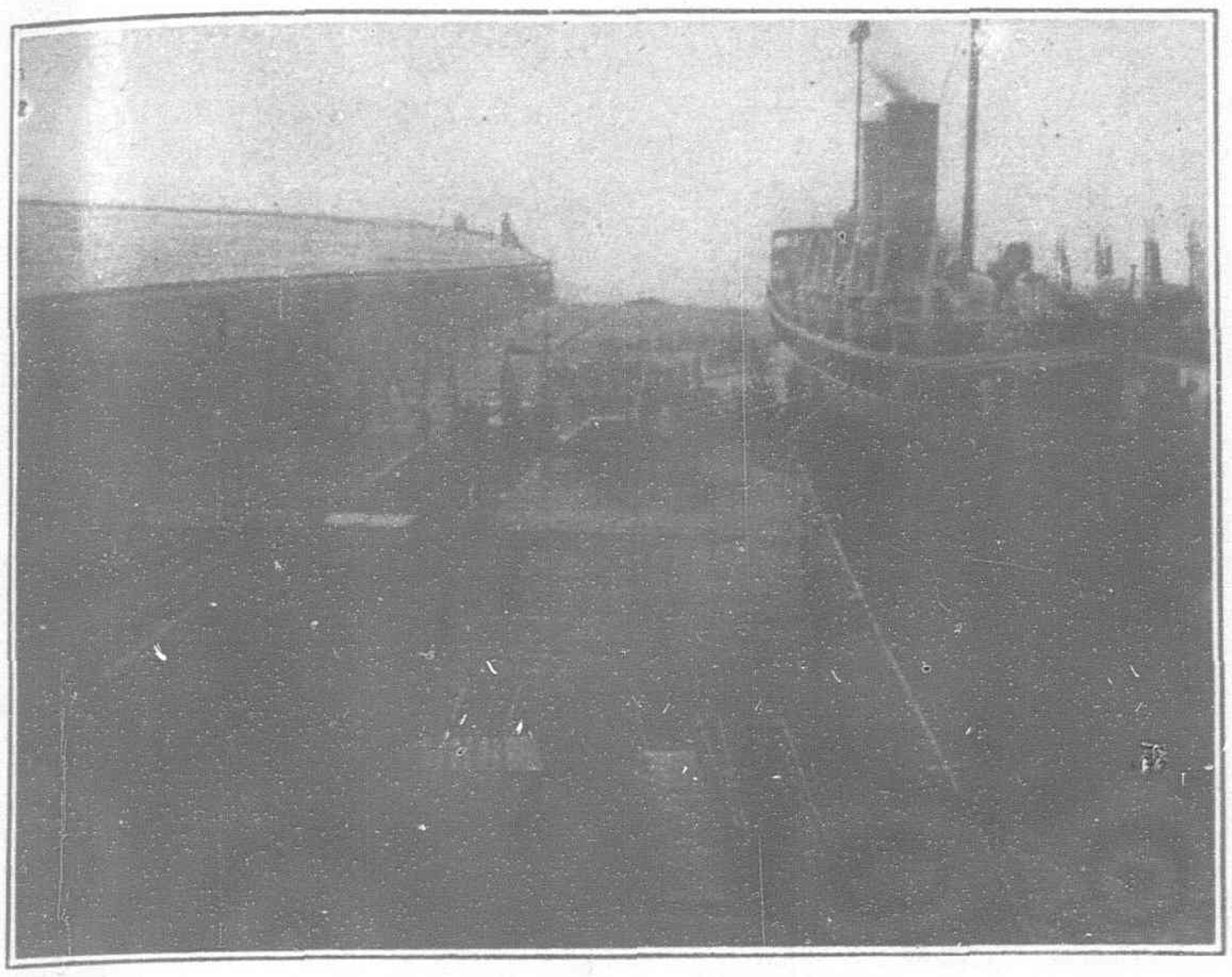
Private Railways

For the encouragement of private railway enterprises in Chosen, regulations were enacted in 1912 making provisions for their proper supervision and protection, and in 1914 special provision was made for granting subsidies to important lines to meet any deficiency in profit below a certain percentage on the paid-up capital of the company favoured. In 1921 new regulations relating to subsidies were promulgated on approval of the Diet for the furtherance of private undertakings. Thus private railways in Chosen have attained

Keijo Station, Keijo



Railway Bridge over the Tomon River



J. G. R. Ferry Boat at Fusan Pier

considerable development, the total length open to business in 1924 reaching 333 miles operated by 6 companies, and that under construction, actual or projected, some 1,340 by 8 companies.

Marine Affairs

In former times there existed no system of marine administration, but in the years 1910-12 affairs relating to routes, ships, seamen, beacons, etc., were all systematized under the Communications Bureau of the present Government, and during 1914-15 not only were the marine regulations unified and adjusted but a marine court was created. Under the old Korean Government a few shipping companies were subsidized, but these were very small concerns indeed, and on the establishment of the new régime they were induced to amalgamate into one big company, the result of which was the Chosen Mail Steamship Company came into being in 1912 and was ordered to establish 12 regular services along the coast. In 1913 the Company was also ordered to start serving the archipelago on the southern coast, making change in some of its coasting services, and in 1914 a private company was ordered to ply on the Yalu. In 1915 a new line was started between Gensan and Vladivostok in consideration of the growing trade with Russia, and in 1918, in view of the trade expansion between West Chosen and Osaka District in Japan, a Shingishu-Hanshin line was opened. On the other hand, as North-east Chosen and West Japan, facing each other, showed every prospect of trade developing between them, the Chosen Mail Steamship Company was ordered in 1918 to open a regular service between Seishin and Tsuruga, and to operate its Gensan-Vladivostok service the year round, instead of suspending it in the depth of winter. As, however, it still failed to meet fully the general demand, in 1920 the Fushiki-Vladivostok line was made to include Seishin as a port of call. To further estension of intercourse with neighboring lands by sea a new North China line was opened in 1922.

In 1910, ships of all kinds entered in the shipping register numbered only 88 with a tonnage of 9,300, but the placing of marine administration under the Communications Bureau in 1912, and the unification of marine regulations in 1914, led to great progress being made in maritime traffic, and the number of ships registered in 1915 reached 330 with a tonnage of 22,000. During the Great War the shipping business in Chosen enjoyed an extraordinary boom, but it was only a passing phase. In the following table is given the number of ships registered in recent years.

	Steamers		Sailing Boats		Total	
	Number	Tonnage	Number	Tonnage	Ships	Tonnage
1919	87	35,682	483	16,432	570	52,114
1920	95	43,322	523	17,508	618	60,830
1921	98	36,170	526	17,272	624	53,442
1922	105	36,044	535	17,668	640	53,712
1923	122	34,114	587	19,380	709	53,494

In consequence of negotiation by the Japanese Government on the basis of the agreement of 1883, the Korean Government in 1903 erected four lighthouses for the first time, and by the year 1906 the number was increased to 53, but as this merely represented one signal for every 160 nautical miles, and navigation around the archipelago on the south-western coast was particularly dangerous during the foggy season, further great increase has since been made. The total number of navigation aids now stands at 225, comprising 98 night, 107 day, and 20 fog signals, the proportion being one signal to every 38 nautical miles.

Posts, Telegraphs and Telephones

A Japanese postal service in the peninsula was begun with the establishment of a post-office at Fusan in 1876, when the port was opened to foreign trade, followed later by the opening of similar offices in other treaty ports with the increase of Japanese settlers. At first these offices dealt with ordinary mail matter alone, but business in money orders and postal savings was started in 1880, and the parcel post in 1900.

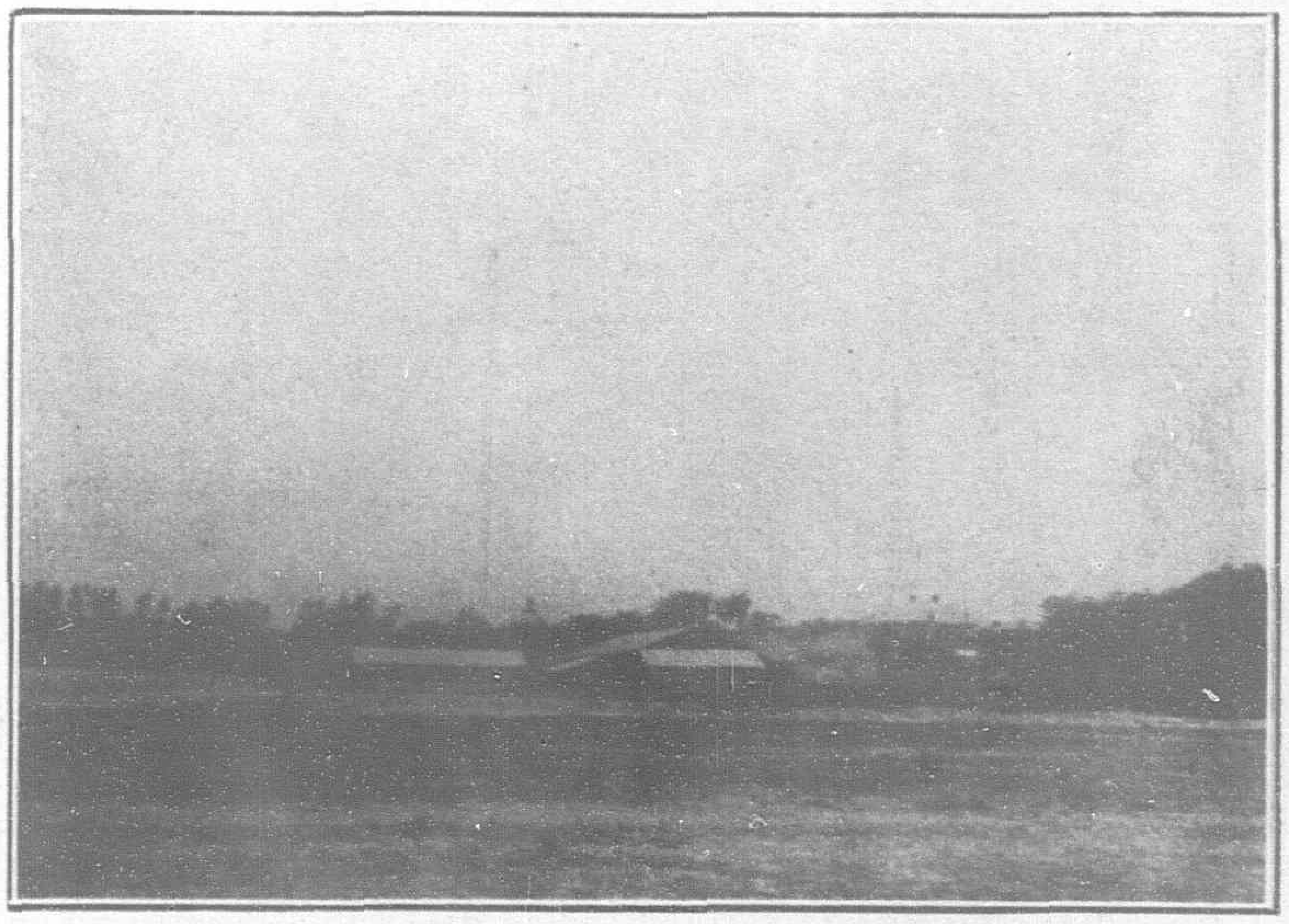
In 1896 the Korean Government introduced a modern postal system, modelling it on that of Japan, and in 1900 formally joined the Universal Postal Union, but owing to poor management and consequent financial loss it was placed under Japanese control in July, 1905, in conformity with the agreement concluded in April that year, and the Japanese postal system was made common to the two lands. Before 1905 there were 427 Korean and 89 Japanese offices as organs for communication, but to-day they number 731, including 110 telegraph and telephone offices.

In the days of the Korean Government only collection and delivery of ordinary and registered mail were carried on, but after the postal union with Japan such special matters as declaration of value, cash-on-delivery, collection of cash, etc., were introduced, and at present there is no place, except for a few remote islands, where there is not at least one delivery a day.

The beginning of the telegraph service was in 1884 when a Japanese office was created in Fusan for communication with the homeland. Later on, similar offices were established in Keijo and a few other centres. The submarine cable between Fusan and Japan was originally the property of a foreign company, and its management was carried on with few exceptions under the Universal Telegraph Rules, but in 1910 Japan bought the cable from the company for the greater benefit of the public. Each year increase was made in the number of operating offices, and from only 44 in 1905 they rose to 690 in 1924.

In 1910 a wireless apparatus was installed on the Kosai-maru, an official inspecting steamer, and in the three lighthouses on the west coast, though the service has not yet been thrown open to the public, and in 1923 a wireless office was opened in Keijo to handle messages sent to and from ships sailing Korean waters and those of the general public.

The first telephone service was undertaken in 1902 between Keijo and Jinsen, and subscribers numbered only 65. In 1903 an exchange service at Fusan was started, and the number of subscribers increased from 310 at the end of that year to over 1,000 at the time of the postal union with Japan (1905). At that time only 16 lines



Wireless Station, Ryusan

were in operation, but expansion was rapidly pursued, and a long-distance line between Keijo and Heijo was opened in 1907, and one between Keijo and Fusan in 1911. Also in 1921 direct connection between Keijo and Mokpo, and Keijo and Gensan was effected, and the 828 lines in operation in 1911 were increased to the large number of 6,729 in 1924, inclusive of 123 long-distance ones. In the following table certain details are given of the telephone service.

	Number of Telephone Offices for Exchange and Messages	Number of Telephone Offices for Messages	Number of Telephone Subscribers	Number of Calls during the Year
1905 ..	5	1	1,065	8,489,530
1910 ..	32	185	6.448	21,260,918
1919 ..	46	484	11,788	58,691,425
1920 ..	49	480	13,142	59,974,020
1921 ..	56	484	14,993	60,649,805
1922 ..	62	489	17,647	72,326,480
1923 ..	81	483	21,776	85,341,678

Business in money orders and savings was first undertaken in Chosen by the Japanese post-office at Fusan in 1880, and the offices handling such business numbered only 30 at the time of the postal union with Japan, so Japan, on taking over control of all postal affairs, increased these offices to 72, and since 1906 has caused post-offices in places containing no inland revenue office to receive and pay out money on behalf of the Government, a departure quite unknown in other countries. In 1910 the system of "furikae chokin" or postal savings transfer account was introduced in Keijo to facilitate the settling of commercial transactions, and subsequently business relating to the receipt of local and national revenues, the flotation, sale, and repayment of public loans, etc., was even taken up by the post-offices for convenience sake. There are now 630 offices handling money orders and savings, showing an increase by 600 per cent., and in the amount of money turned over by 3,000 per cent., as compared with 1905.

On account of the lack of any organ for monetary circulation in Chosen, except the Fusan branch of the Dai Ichi Ginko (a Japanese bank), the Japanese post-office at Fusan was authorized to start business in ordinary money orders in 1880, and later on, those at other open ports followed suit. In 1900 the system of telegraphic transfer was introduced, and in 1903 it was made possible to telegraph money in large amounts for the greater convenience of business people. The total amount of money received and paid out during 1923 reached over 200,000,000 yen, or 20 times that for 1905 and four times that for 1910.

Business in foreign money orders was also taken up in 1880, though at first only with Hongkong. In 1881, exchange was opened with England, and in 1885 an agreement for exchange was concluded with France. This led to the gradual opening of exchange with other countries, and in 1908 the post-offices at Keijo and seven other centers were specified as exchange offices under the international postal agreement. The amount of money dealt with in this way shows a decided upward tendency since the opening of exchange with China in 1923, and in 1924 passed the 1,000,000 yen mark.

Since the system of postal savings was first started at Fusan in 1880, the number of offices taking up this important branch of business has gradually increased, and at the time of the postal union with Japan they numbered about 100. As there was no proper organ for saving in Chosen and the people in general had lost all idea of it owing to the heavy taxation and bitter extortion, the number of Korean depositors in 1908 was only some 4,200, their savings amounting to no more than 37,000 yen, but with the constant encouragement given to thrift and economy, the amount of their deposits has gradually increased, as may be seen from the following table.

	Total Amount		Average Amount per Person	
	Japanese Yen.	Korean Yen.	Japanese Yen.	Korean Yen.
1910	3,016,420	190,045	28.98	5.44
1919	12,427,900	2,498,094	43.26	2.23
1920	14,767,404	2,326,166	48.27	2.16
1921	16,069,768	2,656,570	48.42	2.44
1922	17,111,061	2,764,032	42.60	2.30
1923	18,141,305	2,899,035	41.84	2.29

The system of "furikae chokin," or transfer of one's postal savings to another man's account for payment due, was initiated in Chosen in 1906 at the same time as it was in Japan, but it was not utilized to any great extent by the people as such account was opened only with Tokyo. In 1910, however, such an account was opened in Keijo and this induced steady development along this line of business, so that the amount of money transferred in this way totalled over 380,000,000 yen in 1924, showing an increase by 57 times on that in 1910.

Electric and Gas Undertakings

The first electric enterprise in Chosen was the building of a tramway in Keijo by a joint-stock company organized by an American citizen in 1899, and in 1901 it started the supply of light in addition. Similar works were started in Fusan in 1902 and in Jinsen in 1906, after which little progress was made, for at the time of union with Japan they still numbered but three, with an aggregate capital of 3,300,000 yen and a capacity of 1,380 kilowatts. Since that year, however, steady growth has been witnessed in meeting the general increase in demand for electricity, and these undertakings in 1924 numbered 53 (of which 42 were in actual operation) with a total capital of 63,000,000 yen and a capacity of 57,600 kilowatts. Besides, there were eight official undertakings for government use and 59 private ones.

In Chosen, the electric undertakings so far established depend for the most part upon heat for their motive-power, so in 1911 the Government began to make a country-wide investigation of the waterpower that might be utilized for generating electricity, and completed it with respect to eleven of the larger rivers in 1914, discovering thereby 80 sites capable of producing 76,000 h.p., but as the feasibility of hydro-electric enterprises can only be determined after making long and close inquiry, a more detailed investigation was started in 1922, and the result so far obtained is that 26 of the 131 sites of promise with a combined capacity of 392,000 h.p. are ascertained to be of easy and profitable management.

There are two gas-producing undertakings in Chosen, one at Keijo and the other at Fusan. The former started work in 1909 and the latter in 1912, and by the year 1923 their capital aggregated 2,240,000 yen and their productive capacity 162,000,000 cubic feet.

Control of gas was formerly exercised by the police authorities, but in view of the fact that the business is done as a side line by electric companies it was transferred in 1919 to the Communications Bureau so that both might be under the same supervision.

Meteorological Observation

Meteorological observation in Chosen was first introduced by Japan in 1904. The central observatory is established at Jinsen and has branches at Keijo, Fusan, and eight other centers, but as the country is still regarded as insufficiently served because of the great diversity of its physical features, lighthouses, military hospitals, and farms were also required to make observations, and in 1914 certain municipalities, counties, and police stations were directed to conduct simple forecasts, and to ensure accuracy and rapidity in observation, exchange of meteorological messages was started with the chief observatories in Japan, Taiwan, Kwantung Province, Hongkong, Manila, Vladivostok, etc. In the meantime signal stations were set up in different places in the peninsula, and in localities without such provision the police were required to publish the reports received by them for the use of the public. The observatory at Jinsen issues storm warnings for the whole of the peninsula and publishes a monthly and annual report on the weather, and also engages in the observation of earthquakes and earthtremors, measurement of time, and compilation of the Korean calendar.

South Manchuria Railway Company (Oil Shale Industry).—License for the projected oil shale development is likely to be granted in the near future, it is reported. The company has been making preparations for constructing 80 units of 50 ton Fushun Type Furnaces. The construction will be started as soon as the necessary license is obtained, to be completed before the end of 1929. Two oil tanks, capacity 5,000 tons each, will also be built at Dairen at the same time.

The company expects to produce about 53,000 tons of heavy oil a year, the greater part of which will be sold to the Navy. Sales prices will be about Y.32 a ton at Dairen ; to be delivered from there to the Tokuyama Fuel station by the company's vessels.

Engineering Notes

Cotton Textiles.—The Department of Commerce and Industry of Japan reports the production of cotton textiles in Japan during January at a total value of Y.53,283,544, including wide weaves of Y.39,200,397 about 73 per cent. of the total, narrow weaves Y.10,951,220 about 20 per cent, special weaves Y.3,311,927 about 6 per cent.

Fuji Gassed Spinning Co., Ltd.—The warp stop motion equipment manufactured by the Osaka Kikai Kosakujo (Osaka Machinery Works, Ltd.) has been installed for experiment at the company's Koyama Mill. Results have been satisfactory and the company has decided to install this equipment on 1,000 looms now in operation at this mill. Estimates were made for the initial installation of 200 units by Toyoda, Osaka Kikai, Enshu Shokuki, with Osaka Kikai taking the order eventually. The company expects to install this equipment at the Hodogaya Mill where 500 looms are operated for manufacturing Fuji Silk.

Chapei Electricity and Waterworks Co.—Water supply from the new plant of the Chapei Electricity and Waterworks Co., Ltd., at Dike Road, Military Road, Chapei, Shanghai, was commenced on February 15, 1928. Construction of the new plant started in August, 1926, and the cost has been about $2,000,000. The plant is capable of supplying water at the rate of 12 million gallons every 24 hours. The water is drawn from the Whangpoo River instead of the Soochow Creek which was formerly the source of supply. The new plant covers an area of 150 *mow* and possesses the following features: (1) two coagulation basins, 12 rapid sand filters, and two chlorinators, the combined capacity of which is 12 million gallons, (2) one pump house equipped with a centrifugal pump driven by motor with 1,000 kilowatt power and with a water pressure equivalent to 100 lbs. to the square inch at the works and 40 lbs. per square inch for hydrants, (3) five purified water reservoirs with a capacity of 957,000 gallons, (4) a water tower 95.5 feet high with a capacity of 170,000 gallons, and (5) water mains consisting of C. I. pipes, 36 inches in diameter, which are connected with the old distribution system and aggregate a total length of 7.5 miles. The company is in its fifth year of operation and is a purely Chinese commercial enterprise. The manager is Lu Pai-hung and the sub-manager Chu Shou-cheng.

Canton's Automatic Telephone.—Among the many plans of reconstruction now being put into effect by the Government, is the installation of the new automatic telephone system. Canton with her teeming industrious population is looking forward to an era of great commercial development. She has had an efficient electric plant, a fair system of water-supply, and a progressive and active department of public works. And when the Municipal Government a few days ago, definitely adopted and actually signed to contract with the China Electric Company Limited for the installation of the new automatic Telephone, no one has further room for doubt about the earnest and sincere program of the Administration.

The telephone contract covers the supply of an up-to-date automatic exchange equipment including a modern building for housing the equipment, and a new underground cable construction for outside plant for four thousand telephone subscribers at a total sum of $646,000. The supplier of the telephone materials is the China Electric Company, a part of the well-known Bell Telephone System in the United States of America, who in recent years have demonstrated their efficiency and activity in many a foreign country for the supply of automatic telephone equipment up to a million lines in the name of the International Telephone and Telegraph Corporation.

An exchange of 4,000 lines is far from being sufficient to meet the pressing need of telephone service for such a big and ever growing city like Canton. It is only marking the beginning of telephone development not only in Canton but throughout South China, and before long Hongkong may yet find submarine cables laid so as to afford her the facilities of telephone service to all the principal districts and cities of Kwangtung.

Wireless Telegraphy in Szechuan.—According to information received from the Ministry of Communications, wireless telegraphy between Chungking, Szechuan, and Shanghai is now in successful operation. There will be no increase in charges for wireless messages, which will be the same as for telegrams—(Kuo Min News Agency).

Japan Electric Power Co., Ltd.—In order to extend business in Kobe City the Nippon Denryoku K.K. is planning a transmission line to the City and has already contracted for a supply of power amounting to 1,200 to 1,300 k.w. This transmission line must be completed as soon as possible whether or not the company is able to contract with Kobe Municipality for the supply of power.

At present the electric power supply in the City is monopolized by the Kobe Municipal Electric Bureau which is operating steam power stations. Therefore the price of electric power in Kobe City is about 30 per cent. higher than that in other cities.

Electric Power Development in Central Japan (Kogyo Shimbun).—Electric power development in the districts covered by the Nagoya Teishinkyoku (Nagoya Communication Bureau) has been remarkable during recent years. New developments this year show an increase of about 100,000 k.w. over last year. Present generating capacity is reported as follows:

Hydro-Electric Power:	783,000 k.w.
Steam Electric Power:	136,000 ,,
Total:	919,000 k.w.

Including power stations now under construction, the total generating capacity will be 1,400,000 k.w. Principal stations under construction are: Mikawa Suiryoku Denki's Koshinoto Station 1,000 k.w.; Yahagi Suiryoku's Nagoya Higashi Chikuko 14,000 k.w. (steam); Nohi Denki (to be merged by Miye Godo Denki) will complete Kimbara Station, 5,000 k.w., in the near future. Toho Denryoku has just completed a 20,000 k.w. power plant at Kariya. Power stations to be constructed in the near future include Shekawa Station of Showa Denryoku, capacity 50,000 k.w., Shokawa Suiryoku's 72,000 k.w. plant, etc.

Kita Karafuto Sekiyu K.K.—(North Saghalin Petroleum Co., Ltd.)—For the one year term ended March 31, 1927, profit amounted to Y.82,000 contrary to a loss of Y.941 estimated in the original prospectus of the company. For the current term to be closed at the end of this month an initial dividend of 8 per cent. a year is already assured.

Shipments during the three months from July to September last year amounted to 52,000 tons, of which 50,000 tons were sold to the Navy and the balance to the Nippon Sekiyu K.K. Sales price to the Navy may be estimated at Y.32 a ton or a total of Y.1,600,000; on the same basis sales to Nippon Sekiyu may be estimated at Y.64,000, total Y.1,664,000.

Operating expenses at the wells amounted to Y.778,000 for the 10 months from June, 1926 to March, 1927. These expenses were originally estimated at Y.15.30 a ton. On a basis of Y.16 a ton, profit will be Y.16 a ton or Y.832,000 on 52,000 tons. Deducting head office expenses and travelling expenses estimated at Y.274,000 in the original prospectus, the balance of profit for the second year will be Y.558,000, or 13.95 per cent. of the paid in capital of Y.4,000,000. Allowing Y. 120,000 for depreciation, a dividend of 8 per cent. a year is feasible.

For the third year the company expects to pay a 10 per cent. dividend; sales of 100,000 tons are already contracted for with the Navy. The present production is rated at 220 to 230 tons a day. The company is planning to produce 150,000 tons at Oha alone. Operation will also be started at Nuto (phonetic) fields. The company is to call up Y.10 a share on June 1, when the paid in capital will increase to Y.6,000,000. At Y. 32 a ton sales to the Navy will total to Y.3,200,000; estimating expenditure at 70 per cent., profit will be about Y.1,000,000 or 15 per cent. and enough to pay 10 per cent. dividend.

Underground Railway Planned in Kobe.—A license has been applied for an underground railway to be constructed in Kobe. Plans now being investigated by the Kobe Municipality. The projected line is to start from Sumiyoshi Machi, Muko Gun, Hyogo Prefecture and terminate at Nishi Suma *via* Tsuga Mura in Muko Gun, Fukiai Ku, Ko be Ku, Minato Higashi Ku, Minato Nishi Ku, Hayashida Ku, in Kobe City. The route is 10 miles 16 chains, this being the first part of the plan. The cost of construction is estimated at Y.44,000,000, of which about Y.24,000,000 will be raised by a loan or debenture.

The second part of the plan includes 7 miles 56 chains, running from Wakihama Machi in the City through Fukiai Ku, Minato Nishi Ku, Hayashida Ku to Nishi Suma. Cost estimated at Y.25,000,000.

The company will be known as the Kobe Chika Tetsudo K.K. (Kobe Underground Railway Co., Ltd.), probably to be capitalized at Y. 80,000,000, of which Y. 20,000,000 will be called up.

Mr. Gisaku Takikawa of Kobe is a leading promoter.

Chinese Antimony in 1927.—A report on the Chinese antimony production for last year has been prepared by the Minerals Division of the U.S. Department of Commerce. This report states that, despite military operations at and near the center of production, increased export taxes, and the decline in the price paid by consumers in 1927, it is evident that the output of antimony in China did not decrease during the year as compared with 1925 and 1926. Exports apparently were less than in 1926. The exact tonnages warehoused are unknown.

" Exports" of antimony from Changsha, as reported by the Maritime Customs, are indicative of the total Chinese production, since the Province of Hunan easily accounts for over 95 per cent. of the entire output of the country. (It has been estimated that Hunan contributes 85 per cent. of the total world production). Although some stocks were maintained at Changsha, during 1927 most of the material warehoused was held by merchants in Hankow or Shanghai. Chinese consumption for the year is unknown, but the figure is insignificant as compared with the tonnage shipped abroad.

According to the Maritime Customs, the exports of antimony from Changsha during recent years were as follows :—

Item.	1924. Long tons.	1925. Long tons.	1926. Long tons.	1927. Lond tons.
Regulus	11,142	15,465	16,658	17,324
Crude	1,798	2,865	3,348	2,653
Oxide	—	—	1,750	1,597

The term " export," when applied to those from Hunan, is used to designate shipments of antimony from Changsha to Hankow, Shanghai, and all foreign ports.

No definite information regarding stocks of antimony on hand at Changsha on January 1, 1927, is available. Reports from the American Consulate, however, indicated that 900 tons were held at that port on that date.

Chinese Control.—In 1925 it is estimated that 80 per cent. of the antimony trade of Changsha was in the hands of foreign firms. In 1926 the Chinese did 60 per cent. of the business and conservative estimates for 1927 indicate that over 75 per cent. of the trade was controlled by Chinese. As a consequence, during last year Hankow, although not a production point, definitely supplanted Changsha as the center of the antimony exporting trade of China.

U.S. Exports.—Declared exports of antimony to the United States from Hankow, Shanghai and Changsha during 1926 and 1927, according to the records of the American Consulates, were :—

	1926.	1927.
Regulus	9,676	7,056
Crude	1,578	695
Oxide	1,034	266

Difficulties of the Year.—Although the output last year was not diminished, handicaps to antimony production in the Hunan region were present almost constantly. Since July 1926 the increase in the wages of laborers, commandeering and interruption of traffic by the military, and imposition of new and additional taxes, have tended to affect the Hankow price. Practically all of the mines in Hunan employ the old Chinese method of production, as do the smelters, the outstanding exception being the Tang mine at Yiyang.

Producers generally experienced difficulty during the third quarter of the year in obtaining foreign chemicals required in the purification of their product, and many smelters, for the time being, used inferior Chinese substitutes. As a result antimony regulus less than 99 per cent. pure made its appearance on the market, and it is estimated that 2,000 to 3,000 tons of the inferior grade were placed abroad before it was discovered to be below standard. This condition has been corrected, and since October no regulus below the 99 per cent. grade has been produced for export. Reports were circulated in the Changsha-Hankow district to the effect that in South America and England regulus of an extremely fine and uniform quality was being produced, and that the material was receiving the favor of American trade to the detriment of the Chinese product. Both factors, which may have been partially responsible for the slackening of American trade toward the end of the year, have caused producers considerable anxiety.

On December 31, 1927, approximately 600 tons of antimony were reported on hand at Hankow and 1,400 tons at Changsha. Stocks at Shanghai have not been announced. Production in the Hunan Province at the end of 1927 was estimated at the rate of tons 400 monthly, which, if correct, shows a noticeable decline in rate then prevailing earlier in the year. Shipments from Changsha to Hankow are somewhat irregular owing to military operation in this region.

Lungtan Cement Works.—The Lungtan Cement Works, known also as China Portland Cement Co. is located at the foot of the Tsinglung Hills, east of Lungtan, a market town on the Shanghai-Nanking Railway, near Nanking. The works was started in 1921 and have two plants, one of which consists of three mills, 1 kiln and two jaw crushers, all German. The works are in charge of a German technical expert, Herr. Kritzmann, and the product is sold under the Taishan brand. The head office is at 62 Kiangse Road, Shanghai.

Because of the favorable location near stone and clay, and the transportation facilities by canal and railway, the works are being extended, in spite of the losses suffered in the recent civil wars. A new plant has just been erected in the same neighborhood, equipped with five mills and one kiln, all ordered from Germany at a total cost of $500,000. When the new plant begins operations, the daily output will be increased to 2,500 barrels.

The product is common Portland cement, and a new kind, described in Chinese as " special" or " quick" cement, the process of the latter's manufacture being not disclosed. The Portland cement is made by the semi-wet process, with clay and limestone quarried from the neighboring hills and gypsum imported from Germany.

The product is tested in the works' laboratory, and any output discarded which is not up to the standard set by the Municipal Council of the Shanghai International Settlement.

The cement is brought to market in barrels, bags or unpacked. The barrels are made of iron sheeting and the bags of gunny. Unpacked cement is delivered in bags but after delivery or loading the bags are returned to the works. The cement was sold, per barrel of 357 pounds, nett, last year at $3.30 ; a bag of the same weight, at $3.10 ; and the same quantity, unpacked, at $2.85. The " quick" cement is sold at $5 a barrel. The bulk of the output has hitherto been moved by rail, but as the works are close to the Yangtze, to which access is given by canal, the company is trying to utilize water transportation. A steamer of 3,000 tons was recently bought for this purpose and a wharf is being constructed, the plan being to ship direct to Yangtze ports. There is also a light railway for carrying stone and clay from the quarries and a siding connecting with the railway.

The works employs a staff of about 60, including those in the Shanghai office, and many workmen, whose number will be increased to over 2,000 when the new plant begins operating. The workmen are mechanics and common coolies. The pay for the former varies from $30 to $100 a month with free board. The coolies are employed by the day at 40-50 cents each without food. The works contracts with foremen or head coolies for hauling and loading. Coal used to be imported from the northern provinces but since the interruption of the railway it has been brought from Japan. Three or four coal mines have been found in neighboring hills, one owned by the works, but are as yet undeveloped.

Long Distance Telephone in Kwangsi.—To facilitate communication in Kwangsi province, the Department of Construction has appointed Chen Chieh to supervise the installation of a long distance telephone connecting Kweilin, Pinglo, Liuchow, Wuchow, Lungchow, Hohsien and Chungshan.

Tram Company's New Line.—The Peking Tram Car Company's new line from Tiao Bridge outside Hsin Hwa Men, through Hsin Hwa Street to Hsi Chu Shih Kou will be commenced early next month. Rails and other materials have been provided. The fourth line will now start from Chan Kiao, passing Tai Pin Tsang and will connect with the first line.

Ujigawa Denki K.K. (Ujigawa Electric Power Co., Ltd.).—Supply of electric light and power in the Tsumori District, along the Hankai Railway Line, has been through the Shikitsu and Dotonbori Substations, but in view of increasing demand in the Dotonbori territory, the company is planning to construct a new substation at Tsumori. The capacity will be 9,000 k.v.a.; current to be reduced from 22,000 volts to 3,400 volts. A license is expected in the near future, at which time the construction will be started immediately.

Kawakita Denki Kigyo K.K. (Kawakita Electric Enterprise Co., Ltd.).—The company has decided to organize two new companies, one to be known as the Kawakita Denki Doboku K.K. (Kawakita Electric & Construction Co., Ltd.) to be capitalized at Y.2,000,000. The other Kawakita Denki Shoji K.K. (Kawakita Electric & Commercial Co., Ltd.) capitalized at Y. 1,000,000. The Kawakita Denki Kigyo will transfer the greater part of its business to the new concerns, retaining a controlling power and its activity as a promoter of electric enterprises.

The new Kawakita Denki Doboku will engage in all work in connection with construction in the electric light and power field such as building, foundation, dam, power station and substation contracting and in general civil engineering contracting. The Kawakita Denki Shoji will manufacture and sell telephone equipment and electric machinery.

Three New N. Y. K. Liners Named.—The three new motor driven Trans-Pacific liners which are now being built for Nippon Yusen Kaisha have been named after Japanese shrines, following the usual N.Y.K. Custom. The two being constructed at Nagasaki for launching early spring in 1929 will be called the Asama Maru and the Tatsuta Maru while the one being built at Yokohama for service in 1930 will be called the Chichibu Maru. The latter named after H. I. H. Prince Chichibu.

These three vessels, when completed, will be unsurpassed for luxurious travel from San Francisco to Japan and China. Everything that has been contrived for greater marine efficiency and comfort, together with many entirely new and important features, will be incorporated. The Diesel oil burning engines will add to the cleanliness aboard ship, reduce vibration and materially shorten the length of time for the passage.

These ships will be of 23,000 tons, 20,000 H.P., 19 knots Speed and will make the run from the Pacific Coast to Japan in 15 days.

Chinese Tin Production.—There is a report in the City that operations on some of the tin mines in Malaya that are owned and worked by Chinese have already been suspended on account of the drop in the price of the metal, which is now about £230 per ton, against £266 at the beginning of the year.

Questioned on the subject a London metal authority said to a "Daily Mail" reporter:

The present price of tin is sufficiently low to make it doubtful whether the Chinese-worked mines that still employ primitive methods can still be run to pay, but I have no definite information yet that any material closing down has taken place.

It has been noticed in the past, we are informed, that a drop in the price of the metal has been followed by an increase in the output of some Chinese-worked properties, the men on these mines having presumably had to work harder than before to earn their keep; but a comparatively low price for the metal for a prolonged period would probably result in a gradual suspension of operations on these properties.

Junction Line for Taonan-Angangki and Tsitsihar-Angangki Railroads.—In order to arrange for the early completion of the junction of the Taonan-Angangki and Tsitsihar-Angangki railways, the Ministry of Communications has appointed Yu Chen-fu to negotiate with the management of the Chinese Eastern Railway as the junction line will have to cross the C.E.R. In spite of the objection raised by the Russian directors of the Chinese Eastern Railway, it is learned that construction will be started immediately. Although the distance between the two railways at their terminal is only nine *li*, the work will be quite extensive as the 45 mile Tsitsihar-Angangki line will have to be widened; its present gauge being used formerly for a light railway. Upon the completion of this junction line, beans and other important foodstuffs will be easily transported to South Manchuria, thus increasing traffic on all railroads and benefiting the people.

Kiangsi-Fukien Highway.—Transportation in Kiangsi province has always been bad. Last year, plans for the construction of five trunk roads were completed, but owing to civil war, they have not been carried out, excepting 30 *li* of the road between Nanchang and Lientang. The Department of Construction has bought 20 automobiles from Shanghai to run on it. For the construction of the Kiangsi-Fukien highway the Department of Roads has made a contract with the China International Famine Relief Commission, some of the important terms of which are as follows:

1. The chief engineer of the Kiangsi branch of the China International Famine Relief Commission has the right to revise the plans drawn up by the Department of Roads.

2. The C.I.F.R.C. contributes $200 for the construction of each *li* and the Department of Roads is responsible for any deficit. The construction of bridges and canals is to be paid for by the commission.

3. The C.I.F.R.C. furnishes surveyors and surveying instruments. The Department of Roads is to furnish laborers, the numbers of which and the places where they shall work, to be designated by the Commission.

4. The staff of the C.I.F.R.C. claims protection from the authorities in all *hsiens*.

5. This contract becomes effective from the date of signature and holds good for succeeding civil authorities in Kiangsi until the completion of the road, the administration of which will be duly handed over to the provincial government.

Mining in Indo-China.—Discussing the future of mining in Indo-China, a Tonkin correspondent of "L'Echo des Mines" deprecates the tone of disillusionment adopted recently in the expression of views on the situation of the industry in the region indicated. In the first place, there can be no doubt that the future of the Tonkin coal industry is assured, and that the output can be substantially increased without risk of over-production, provided the commercial side proves equal to its task. With regard to tin, the value of the current production is nearly 20,000,000 frs. per annum. For most of it the Tonkin mines are, no doubt, responsible, but, on the other hand, a large production is as yet scarcely to be expected of the mines in Laos, most of which have been started only recently, and are engaged in getting their plant and equipment set up, under transport conditions of which outsiders can form no adequate idea. It should, the writer says, be made known that Indo-China is, naturally, a mining country par excellence. From a geological point of view—apart from the recent great deltas—the whole of Indo-China is a very ancient country, which has emerged since the beginning of the Secondary, and is analogous on many sides to the great French central "massif." Moreover, its soil has been the theater of orogenic phenomena dating from the end of the Primary or the beginning of the Secondary, these characteristics being recognized, save in particular cases, as favorable to the existence of metalliferous deposits. Contrary, perhaps, to general belief, these conditions are present not only in the case of Tonkin, which is beginning to be well prospected, but also in the case of Annam, Cambodia, and part of Laos, where miners have scarcely penetrated. Mining in Indo-China may, accordingly, be regarded with absolute confidence in its future and the writer predicts that a few decades hence there will be general astonishment at the rather timid prudence shown in developing the mineral wealth which the country undoubtedly possesses in great abundance.

Electric Light Company at Chefoo.—The Shen Ming Electric Light Co. has been organized at Chefoo, Shantung province, and registered with the Ministry of Industries.

Musashino Central Electric Railway Co., Ltd.—A new company to be known as the Musashino Chuo Denki Tetsudo K.K. is being promoted by Mr. Raita Fujiyama, advisor to the Hachioji Denki Tetsudo K.K. (Capital Y.1,000,000) and others. The new concern will be capitalized at Y.7,000,000 and will take over the business of Hachioji company, to complete its licensed line from Hachioji City in Tokyo Prefecture to Chichibu Omiya in Saitama Prefecture.

New Railways Licensed in Japan.—New railways (and extensions) licensed for construction recently include the following:

Enoura Rinko Tetsudo K.K. (Electric):
(Enoura Harbor Railway Co., Ltd.)
Line: From Mishima Machi, Tagata Gun, Shidzuoka Prefecture to Shidzuura Mura, Sunto Gun, same Prefecture.
Mileage: 5 miles 40 chains.
Estimated cost of construction: Y.1,600,000.

Kanamachi Denki Tetsudo K.K.:
(Kanamachi Electric Railway Co., Ltd.)
Line: From Iogi Mura, Kita Tama Gun, Tokyo Prefecture to Kana Machi, Minami Katsushika Gun, same Prefecture. Mileage: 20 miles 50 chains.
Cost of Construction: Not given.

Sumiyoshi Kosaku Tetsudo K.K.: (Electric)
(Sumiyoshi Cable Railway Co., Ltd.)
Line: In Sumiyoshi Mura, Muko Gun, Hyogo Prefecture.
Mileage: 65 chains.
Estimated cost of construction: Y.300,000.

Tobu Tetsudo K.K. (Steam and Electric) Extension:
(Tobu Railway Co., Ltd.)
Line: From Moro Mura, Sawa Gun, Gunma Prefecture to Minami Tachibana Mura, Seta Gun, same Prefecture.
Mileage: 11 miles 8 chains.
Estimated cost of construction: Y.2,200,000.

Agatsumagawa Denryoku K.K. (Agatsumagawa Electric Power Co., Ltd.)—The Tokyo Dento K.K. has been asking the company to lower the rate of charges, and for last term the company paid a dividend of only 7.5 per cent, probably in order to provide for the future possibilities. With a view to lower the average cost of construction, the company had plans to construct two more power stations, Himata and Nishikubo, total 23,000 k.w., but the plan has been postponed at the request of its parent company. The period of postponement is now at an end and the company expects to start the projected construction as soon as the snow melts. The cost is estimated at Y.390 a k.w., total about Y.9,000,000, which is about 50 per cent. lower than the average of Y.600 a k.w. of existing equipment.

For the necessary funds the company will float a new debenture issue of Y.5,000,000 before long. On completion of the construction during 1930, as planned, power will be sold to Tokyo Dento at Y.75 a k.w. a year, at which total will be Y.1,725,000 on 23,000 k.w. Deducting expenditure estimated at 20 per cent. the balance of profit will be Y.1,380,000 or 14 per cent. of the construction cost of Y.9,000,000.

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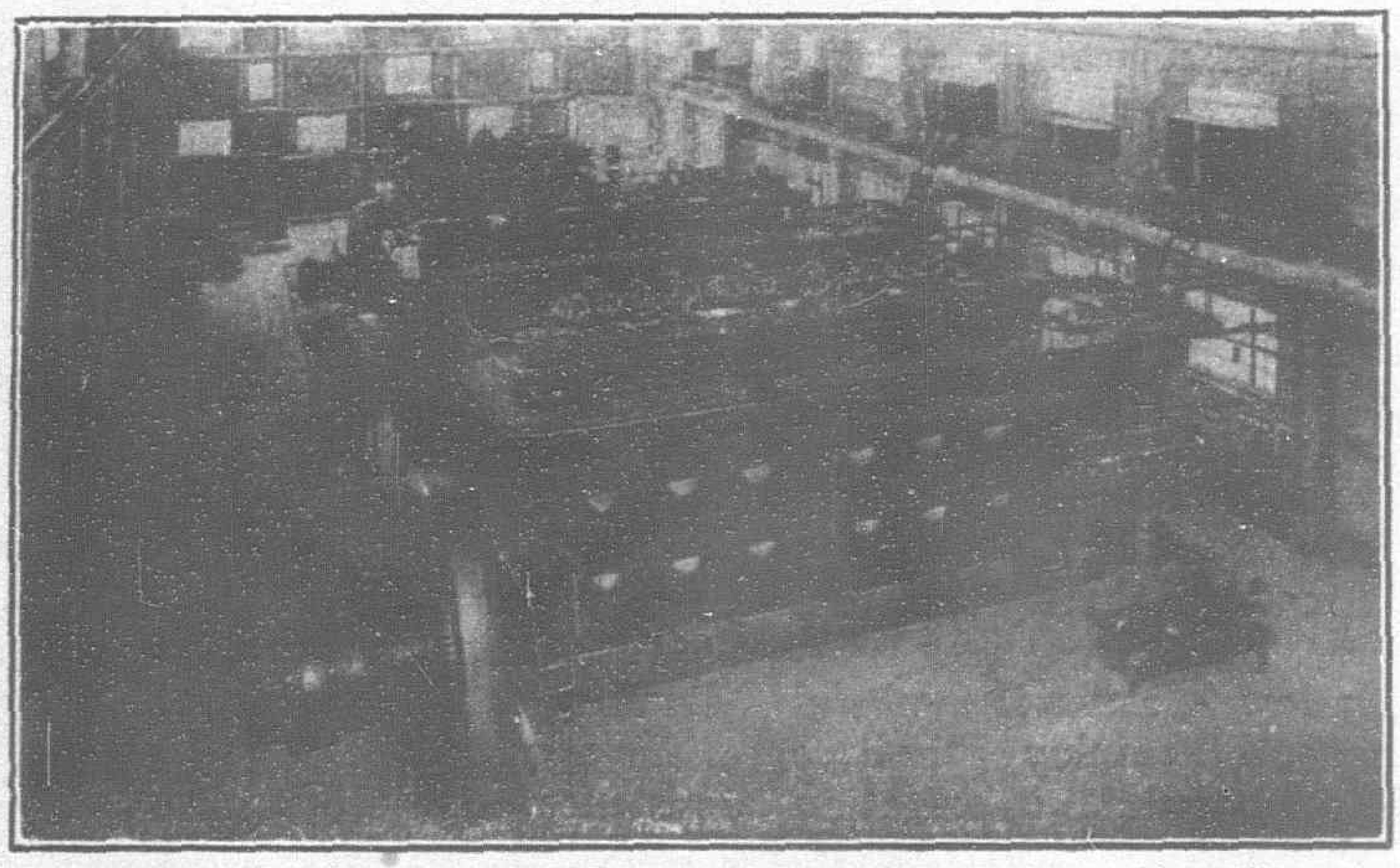

Sulzer Diesel Engine Plant
at the
Compagnie Française de Tramways et d'Eclairage Electriques de Shanghai

2×1,500 B.H P.=3,000 B.H.P.
2×3,600 B.H.P.=7,200 B.H.P.
1×4,800 B.H.P.=4,800 B.H.P.
Total ... 15,000 B.H.P.

Uniflow Steam Engines, Air and Gas Compressors, Upright Watertube Boilers, Cornish and Lancashire Boilers, High and Low Lift Centrifugal Pumps, Fans and Ventilators for all purposes, Fire Engines, Stationary and Marine Diesel Engines, Airless Injection Diesel Engines, ICE-MAKING AND REFRIGERATING PLANTS, Maag Gears and Maag Planing Machines.

WINTERTHUR. SWITZERLAND.